

# FLIGHT

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM.

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## Flight.

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## EDITORIAL COMMENT.

### The Zeppelin Fetish.

Probably most of our readers will remember the pathetic exclamation of the weary and much-ried mother regarding her absent offspring: "Mary, go and see what Johnnie is doing, and tell him he mustn't." To most folk there is a real human touch in that little injunction. Journalism, through its editors, to-day is in a somewhat analogous position to the tyrant boy. Day in and day out, at times almost hour by hour, notifications, explanatory, contradictory and otherwise, arrive from the Censor as to what may and may not—chiefly may not—be done, until it becomes a perfect nightmare, editorially, to let anything go forward for press. With every new intimation it becomes a case of—"See what So-and-so is writing, and tell him he mustn't." And so by degrees almost every subject is closed for mentioning, let alone discussing, and with each succeeding issue there is an increasingly heavy load of anxiety weighing upon one, for some forty-eight hours immediately following publication, in case, quite innocently and inadvertently, some minor but "Defence of the Realm Act" incriminating item of "news" or fact may have filtered through into the editorial pages. We are not complaining, as we fully appreciate the objects with which these regulations have been promulgated. We are merely stating the facts

as they are, and so that, if at times the comments in these pages may appear somewhat wide of the main purpose for which a journal of the character of "FLIGHT" exists, our readers may refrain from "strafing" us too severely, and rather extend a thought of sympathy to those who are engaged in an extremely strenuous effort to keep outside the walls of an abode of durance vile—otherwise, one of His Majesty's prisons. This is not all nonsense, but, as may be confirmed by cases recently reported in the press, solid fact. And in another direction, to come to our moral from an aviation point of view, the public generally seem to be affected by regulations which are in a way equally harassing, brought about directly through the navigation of the air—viz.: the Zeppelin Bogey and the order of the Government authorities for the regulation of lights.

From all over the country come reports of convictions of people who have been judged to have exhibited what may be considered by some individual police-constable a "too powerful or brilliant light." It may be in a house, or it may be on a moving vehicle, whether that be a car, a horse-drawn conveyance, a hand-cart or a perambulator. It may be on the coast-line, somewhat inland, or in the centre of these isles. It's all the same, wherever or whatever it is. In some districts things appear to be carried a step further, and, from a bad accident reported last week from Goole, military orders have apparently been given by someone or another, to see that road vehicles of all sorts entirely extinguish their lights. First results, a lady killed and others injured in a collision between a motor car and a motor cycle, the drivers of which had duly obeyed the injunctions imposed upon them. Neither could see the other, and as for mere pedestrians, they had simply to jump for it, and take to the ditch or any other convenient "dug-out" that might be handy, as each vehicle followed its erratic course along the King's highway.

And the absurdity of the situation is made still worse from the fact that the whole proceeding is positively illegal, as witness the numerous prosecutions, in such places as Brighton, by way of example, against motorists for not having lights on their vehicles, notwithstanding the police admitting the fact that their victims were acting under the provisions of the Defence of the Realm Act. Now, could anything be more fatuous than such an order? It all comes about by reason of this

Zeppelin fetish—which in the past has been worked to such advantage by those whose interests were best served by maintaining its existence. The general suppression of glaring lights we have every sympathy with, as there is no reason why the aerial pirates should be guided by such easy landmarks—especially at coast-line towns—as strong fixed lights would convey; whilst powerful headlights on motor cars are also to be strongly deprecated. But there is a big gap between that and the total extinction of lights upon moving vehicles, even on the coast-line, let alone on country roads, or in towns and inland spots. The recent letter of Mr. A. J. Balfour, in which he laid the bogey out in all its nakedness, should go far to neutralise the would-be scare effects which it is sought to create in certain directions. In saying this we are not forgetting the latest raid announced on the morning of our writing this week, when we are without any knowledge of either material damage or casualties incurred. We still hold to the opinion that, relatively, the danger is a negligible one—from a military point of view it is *nil*—and should not be allowed to lead to an evil which may easily result in very disastrous consequences. The very slight assistance which dimmed lights can give to aircraft high up in the heavens, and the infinitesimal amount, comparatively, of damage which might, therefore, accrue from the use of such lights, are so inappreciable in comparison to the possibilities of mischief to the public by complete extinction, that the remedy would appear as if it were far worse than the disease, leaving out of consideration the enormous amount of trading and commercial loss which has been brought about by the lighting order—most people preferring to

remain indoors after dark, there being, therefore, no inducement for traders to cater for customers.

On the whole, therefore, we think that steps should certainly be taken by the proper authorities to let it be known that to prohibit altogether the use of lights upon vehicles is an unnecessary proceeding, having regard to any help faint lights might afford to air-raiders. In fact, we have in our mind that consequences following the obeying of such an order might bring with it very serious legal liabilities to the actual individuals responsible for its issue.

It is quite evident that the Germans have been altogether wrong in their estimates of what they could effect by means of their Zeppelins, and in a great measure the continued bomb attacks are more for home effect—especially since the confirmed failure of the submarine blockade—than with the expectancy of doing any real harm to this country. Fortunately our authorities have not lost their head in any way over these unwieldy mammoths, and we venture to think that the very effective work of our own unpretentious two-seater scouts, at comparatively small outlay, will in good time be found to have made a most remunerative return. It may well be asked at what cost to the enemy, but the answer to that is once again “Wait and see.” In the meantime, in this connection, just put your thinking-cap on and refer to Mr. Balfour’s second letter published in the daily press, in which the First Lord of the Admiralty makes mention of the very material losses of submarines by the Germans, and take comfort in the thought that aviation has not been entirely out of the tracking down of the enemy under-water craft.

## REORGANISATION OF THE ROYAL NAVAL AIR SERVICE.

THE Secretary of the Admiralty on Wednesday evening issued the following important communication:—

“The rapid expansion of the Royal Naval Air Service, both in respect of *personnel* and *matériel*, has rendered necessary a reorganisation of the Admiralty Air Department, and their Lordships have decided to place it for the future under the direction of a Flag officer, with the title of Director of Air Services. Rear-Admiral

C. L. Vaughan-Lee has been selected for this appointment.

“The present Director of the Air Department, Commodore M. F. Sueter, C.B., has been promoted to the rank of Commodore, 1st Class, and will be in charge of the *matériel* side of naval aeronautical work, with the new title of Superintendent of Aircraft Construction.”

### The Roll of Honour.

THE Secretary of the Admiralty has announced the following casualties:—

Under date August 19th (from the Dardanelles):

**Killed.**

Captain Charles H. Collet, D.S.O., R.M.A. (Flight-Commander, R.N.A.S.).

Under date September 3rd:

**Injured.**

Flight Sub-Lieutenant Stanley A. Turpin, R.N.

Undated:

**Previously reported Missing, now reported a Prisoner of War in Germany.**

Lieutenant John M. D'A. Levy, R.N.

The following casualties in the Expeditionary Force have been reported from General Headquarters:—

Under date August 21st:

**Killed.**

Sergeant B. Barnard.

Under date August 23rd:

**Missing.**

Second Lieutenant C. Gallie, Royal Scots Fusiliers, attached R.F.C.

Second Lieutenant W. M. Wallace, 5th Rifle Brigade, attached R.F.C.

Under date August 28th:

**Previously Officially reported Missing, now Unofficially reported Killed.**

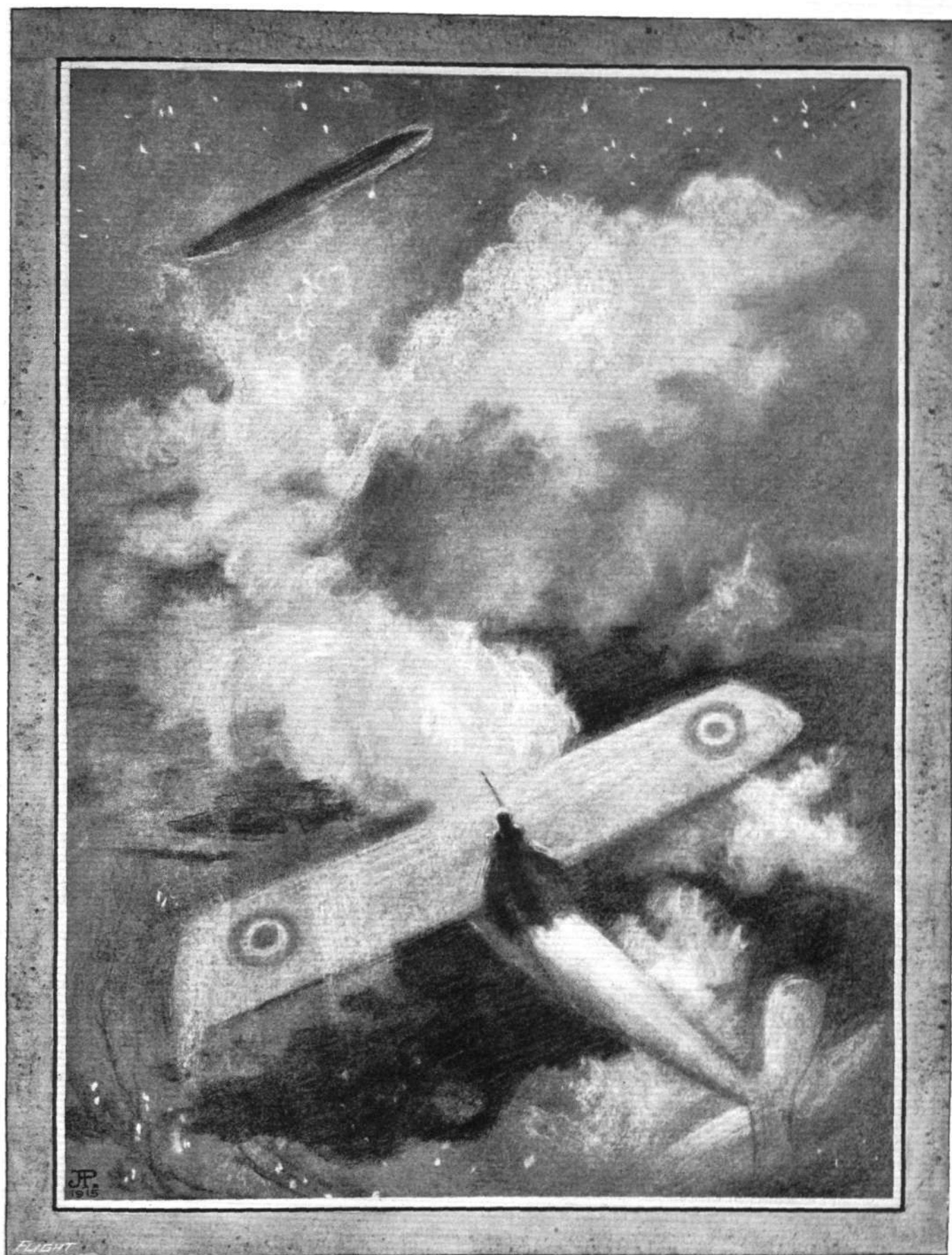
Captain R. M. Pike, Royal Flying Corps.

Undated:

**Previously Officially reported Missing, now Unofficially reported Prisoner of War.**

Second Lieutenant D. D. Drury, Intelligence Corps, attached R.F.C.

It was unofficially announced on Wednesday that Lieutenant G. Hobbs, R.F.C., had been killed on the previous morning at Martin Mill, near Dover.



AN AERIAL NOCTURNE.—Like a knight of old, sallying forth between clouds and stars, upward on the trail of the pirate airship. From an original drawing by J. Prochazka.

"Flight" Copyright.



# AIRCRAFT WORK AT THE FRONT.

## OFFICIAL INFORMATION.

### French.

*Paris, Sept. 1st. Evening.*

"ENEMY aviators dropped bombs on Lunéville, where victims are reported among the civilian population."

*Paris (Ministry of Marine), Sept. 3rd.*

"Last week, despite a violent cannonade and the use of spot-lights, our naval airmen threw more than 300 4-in. shells on the German naval installations on the Belgian coast.

"In Egypt, Syria, and Venice our waterplanes are also showing great activity. They have frequently driven away Austrian machines, following one as far as Pola."

*Paris, Sept. 3rd.*

"The German papers reproduce the French *communiqué* of August 29th, relating to the check suffered by the German aeroplanes in their attempted raid on Paris. But they falsify it in such a way as to give it the opposite meaning. This *communiqué* was expressed as follows: 'The German aeroplanes did not succeed in attaining their objective.' The German papers translate it thus: 'Sie konnten ihr ziel erreichen,' that is, 'they succeeded in attaining their objective.' The negative was omitted owing to a typographical slip, no doubt."

"The *Lokalanzeiger* reproduces the *communiqué* with the title 'German aeroplanes over (über) Paris.' The *Vossische Zeitung* prints in large characters the falsified sentence, but contents itself with the title, 'Deutsche flieger vor Paris,' 'German aviators before Paris.' The *Berliner Tageblatt* announces 'Deutsche flieger bei Paris,' 'German aviators near Paris,' all over the same text. Finally, the *Leipziger Neueste Nachrichten* gives also, 'Sie konnten ihr ziel erreichen,' and adds, in their comment: 'The flight of the four German aeroplanes towards Paris has, according to the French official *communiqué*, attained its object.'"

*Paris, Sept. 6th. Afternoon.*

"Our aircraft bombarded the barracks of Dieuze and Morhange."

*Paris, Sept. 6th. Evening.*

"On September 1st, as we announced in the long *communiqué* of that date, four German aeroplanes bombarded Lunéville, an open town, where there was absolutely no military establishment to destroy. Our enemies had pushed their refinement so far as to aim distinctly at the populous quarters, and to choose for their operations the day and the hour of the market. Thus the victims, unfortunately too numerous, were mostly women and children.

"As a measure of reprisal, 40 of our aeroplanes this morning bombarded the station, the factories, and the military establishments at Saarbrück. The aviators were able to verify that the results achieved were considerable.

"A German machine was obliged to land at Calais, and the aviators were taken prisoners.

"Enemy aeroplanes dropped bombs on Saint Die without doing any damage or causing any loss of life or injury to persons."

*Paris, Sept. 7th. Afternoon.*

"German aeroplanes flew yesterday morning over Gérardmer and dropped some bombs. The first raid was without result; the second resulted in the death of two people."

*Paris, Sept. 7th. Evening.*

"In retaliation for the bombardment of the open towns of St. Die and Gérardmer by German aeroplanes, a French aeroplane squadron dropped bombs on the station and the military establishments of Fribourg-en-Brigau, and it was observed that a fire broke out there. All our aeroplanes returned undamaged.

"Our aeroplanes also bombarded the railway stations of Sarrebourg, Pont Faverger, Warner, Iville, Tergnier and Lens.

"Last night one of our dirigibles dropped bombs on the railway lines round Peronne."

### Russian.

*Petrograd, Sept. 5th. Evening.*

"At the entrance to the Gulf of Riga enemy scout seaplanes appeared several times on the 3rd and 4th inst. above the Viben Strait, throwing bombs on our torpedo boats. They were driven off on each occasion by the gunfire of our ships."

### Italian.

*Rome, Sept. 3rd.*

"One of our aviators dropped bombs with effect upon the cantonments of the enemy along the road to Kostanje Vica and Voiscica."

*Rome, Sept. 5th.*

"During the last few days the enemy has been showering upon our lines pamphlets urging soldiers to desert and giving grotesque accounts of the progress of the war."

*Rome, Sept. 6th.*

"Enemy aeroplanes have persistently attempted to make surprise raids over our territory, but wherever they have appeared our anti-aircraft batteries and the rapid ascent of our pursuit squadrons have impelled them to retreat precipitately."

*Rome, Sept. 7th.*

"Two Austrian aeroplanes yesterday afternoon dropped bombs over the Venetian lagoon, but without causing any damage.

"One of the machines was hit by our anti-aircraft guns, and was forced to descend into the sea.

"The two officer airmen were made prisoners by our destroyers. The machine sank."

### German.

*Berlin, Sept. 1st.*

"North-west of Bataume an English aeroplane was shot down by one of our aviators."

*Berlin, Sept. 2nd.*

"A French aeroplane flying over Avocourt, north-west of Verdun, was shot down by one of our battle aviators. The machine was set on fire and brought crashing down."

*Berlin, Sept. 6th.*

"An enemy biplane was shot down on the Menin-Ypres road."

*Berlin, Sept. 7th.*

"In the course of an enemy aeroplane attack on Lichterfelde (north of Roulers in Flanders) seven Belgian inhabitants were killed and two injured. German battle aeroplanes brought down an enemy machine over Cappel (south-east of St. Avoild). The occupants lost their lives in the course of the aerial combat."



"MISSED!"—An air attack on a patrol boat. By T. Morgan.

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## THE BRITISH AIR SERVICES.

### Royal Naval Air Service.

THE following appeared among the Admiralty announcements of the 1st inst. :—

Temporary Sub-Lieut. (R.N.V.R.) R. V. Harcourt, M.P., promoted to temporary Lieutenant, with seniority of Aug. 30th.

R. S. Collinson granted temporary commission as Sub-Lieutenant (R.N.V.R.), with seniority of Aug. 26th, and appointed to "President," additional.

The following appeared among the Admiralty announcements of the 2nd inst. :—

Probationary Flight Sub-Lieut. J. O. Davis, confirmed as Flight Sub-Lieutenant, promoted to Acting Flight Lieutenant, with seniority of Aug. 31st, and appointed to "President," additional, for R.N.A.S.

The undermentioned have been entered as Probationary Flight Sub-Lieutenants, for temporary service, with seniority of Sept. 4th, and appointed to "President," additional, for R.N.A.S. : W. E. Gardner, S. A. Black and J. B. Howard, all lent to "Excellent," for short (G.) course.

The following temporary commissions (R.N.V.R.) have been granted : F. E. Rowett as Lieutenant, and A. M. Fitz-Randolph as Sub-Lieutenant, both with seniority of Sept. 1st, and appointed to "President," additional, for R.N.A.S.

The following appeared among the Admiralty announcements of the 3rd inst. :—

Capt. I. T. Courtney, R.M.L.I., granted the temporary rank of Major whilst holding the appointment of Squadron-Commander in the R.N.A.S. Dated Sept. 1st.

Temporary Sub-Lieutenant, R.N.V.R., F. F. Chambers promoted temporary Lieutenant. To date Sept. 1st.

The following appeared among the Admiralty announcements of the 4th inst. :—

Temporary Sub-Lieut. R. Graham, R.N.V.R., transferred to R.N.A.S. as Probationary Flight Sub-Lieutenant for temporary service, and appointed to the "President," additional, for R.N.A.S. To date Sept. 3rd.

The following appeared among the Admiralty announcements of the 6th inst. :—

Temporary Lieut. (R.N.V.R.) B. Johnson promoted to temporary Lieutenant-Commander (R.N.V.R.), with seniority of Sept. 2nd.

The undermentioned have been entered as Probationary Flight Sub-Lieutenants, for temporary service, with seniority as follows : J. M. Alexander, July 24th ; A. Fellowes-Buck, Sept. 4th ; S. M. Kinkead, H. P. Watson, V. E. Sieveking, L. Edwards, and J. S. Bolas, all Sept. 11th.

A. H. Kendall, granted temporary commission as Lieutenant (R.N.V.R.), with seniority of Sept. 4th.

The following appeared among the Admiralty announcements of the 7th inst. :—

Flight-Commander H. Delacombe, granted acting rank of Squadron Commander. To date Sept. 4th.

Flight-Lieut. G. Colmore, granted acting rank of Flight-Commander. To date Sept. 4th.

### Royal Flying Corps (Military Wing).

THE following appeared in a supplement to the *London Gazette* issued on the 1st inst. :—

*Sergeant-Majors to be Quartermasters, with the honorary rank of*

*Lieutenant.*—Aug. 13th, 1915 : John Mead, William J. Waddington, James E. Parkin.

*Supplementary to Regular Corps.*—To be Second Lieutenants (on probation) : Otto Lerwill ; Aug. 11th. Cecil Faber ; Aug. 12th. Ernest Selby ; Aug. 15th. John B. Fitzsimons ; Sept. 1st, 1915.

The following appeared in the *London Gazette* of the 3rd inst. :—

*Flying Officers.*—Aug. 21st : Capt. R. A. Bradley, North Staffordshire, and seconded ; Second Lieut. C. d'A. E. W. Reeve, Suffolk, and seconded ; Temporary Second Lieut. A. C. Hagon, Royal Warwickshire, and transferred to General List ; Second Lieut. J. N. Washington, Manchester, and seconded ; Second Lieut. I. H. D. Henderson, Argyll and Sutherland Highlanders, and seconded ; Second Lieut. V. S. Brown, Special Reserve.

*Supplementary to Regular Corps.*—Second Lieutenants (on probation) confirmed in rank : F. W. Wright, J. E. Marriott, J. H. Herring, C. Defries, V. S. Brown. To be Second Lieutenants (on probation) : W. N. M. Dunkley ; July 24th. L. A. McDougald ; Aug. 11th. A. T. Thompson ; Aug. 12th. H. H. Bright ; Aug. 26th. T. M. Scott ; Sept. 1st.

The following appeared in a supplement to the *London Gazette* issued on the 6th inst. :—

*Squadron-Commander.*—Capt. (temporary Major) Gerard P. Wallace, Staff, South African Permanent Force, and to be temporary Major. July 31st, 1915.

*Flight-Commanders, and to be temporary Captains.*—July 31st, 1915 : Lieut. (temporary Capt.) Basil H. Turner, Staff, South African Permanent Force ; Lieut. (temporary Capt.) Kenneth R. Van der Spuy, Staff, South African Permanent Force ; Lieut. (temporary Capt.) Gordon S. Creed, Staff, S. African Permanent Force.

*Flying Officer.*—Temporary Lieut. Edward C. Emmett, Staff, S. African Permanent Force, and to be temporary Lieutenant. July 31st.

*Assistant Equipment Officer.*—Lieut. Selwood H. Hewett, Staff, South African Permanent Force, and to be temporary Lieutenant. July 31st, 1915.

The following appeared in the *London Gazette* of the 7th inst. :—

*Memoranda.*—To be temporary Second Lieutenant : Stanley T. Welch, from Second Lieutenant Royal Flying Corps, Special Reserve. Sept. 8th, 1915.

*Supplementary to Regular Corps.*—Second Lieutenants to be Lieutenants : Aug. 1st, 1915 : Francis W. H. Lerwill, Arthur M. Wynne, Alexander B. Rendall, Frederick H. Jenkins, Frank S. Barnwell, Herbert P. S. Clogstoun, Alan M. Morison, Marwood E. Lane, Frank W. Goodden, Robert H. Mayo, Hazelton R. Nicholl, Oliver D. Filley, Stanley W. Caws, Rupert H. S. Mealing, Howard L. Cooper, Charles J. Chabot, Cecil H. Pixton, George L. P. Henderson, E. R. Scholefield, Cecil Barber, Robert G. Gould, Sacheverell A. Hebden, Oscar Greig.

To be Second Lieutenants (on probation) : Evelyn F. Driver, late temporary Second Lieutenant South African Aviation Corps ; July 31st, 1915. Geoffrey Somers-Clarke ; Aug. 3rd, 1915.

### Central Flying School.

THE following appeared in a supplement to the *London Gazette* issued on the 2nd inst. :—

*Officer in Charge of the Experimental Flight (graded as a Squadron Commander).*—Capt. George B. Stopford, R.A., a Flight Commander, Military Wing ; Aug. 6th, 1915. (Substituted for the notification which appeared in the *Gazette* of Aug. 19th, 1915.)

## THE "X" AIRCRAFT RAIDS.

### "X7" Raid, September 7th (September 8th).

IN view of the decision of the Government not to allow details of aircraft raids to be published we are as before (see issue of June 11th, 1915) giving to each one an index number. Eventually, when details are available, we shall give the respective information under these index numbers, which will facilitate easy reference to each particular raid.

The following has been issued by the Press Bureau, the date in brackets indicating when the statement was issued :—

"Hostile aircraft again visited the Eastern Counties last night, and bombs were dropped.

"It is known that there have been some fires and some casualties, but particulars are not yet available.

"The number of the casualties will be communicated to the Press as soon as they can be ascertained."

Later.

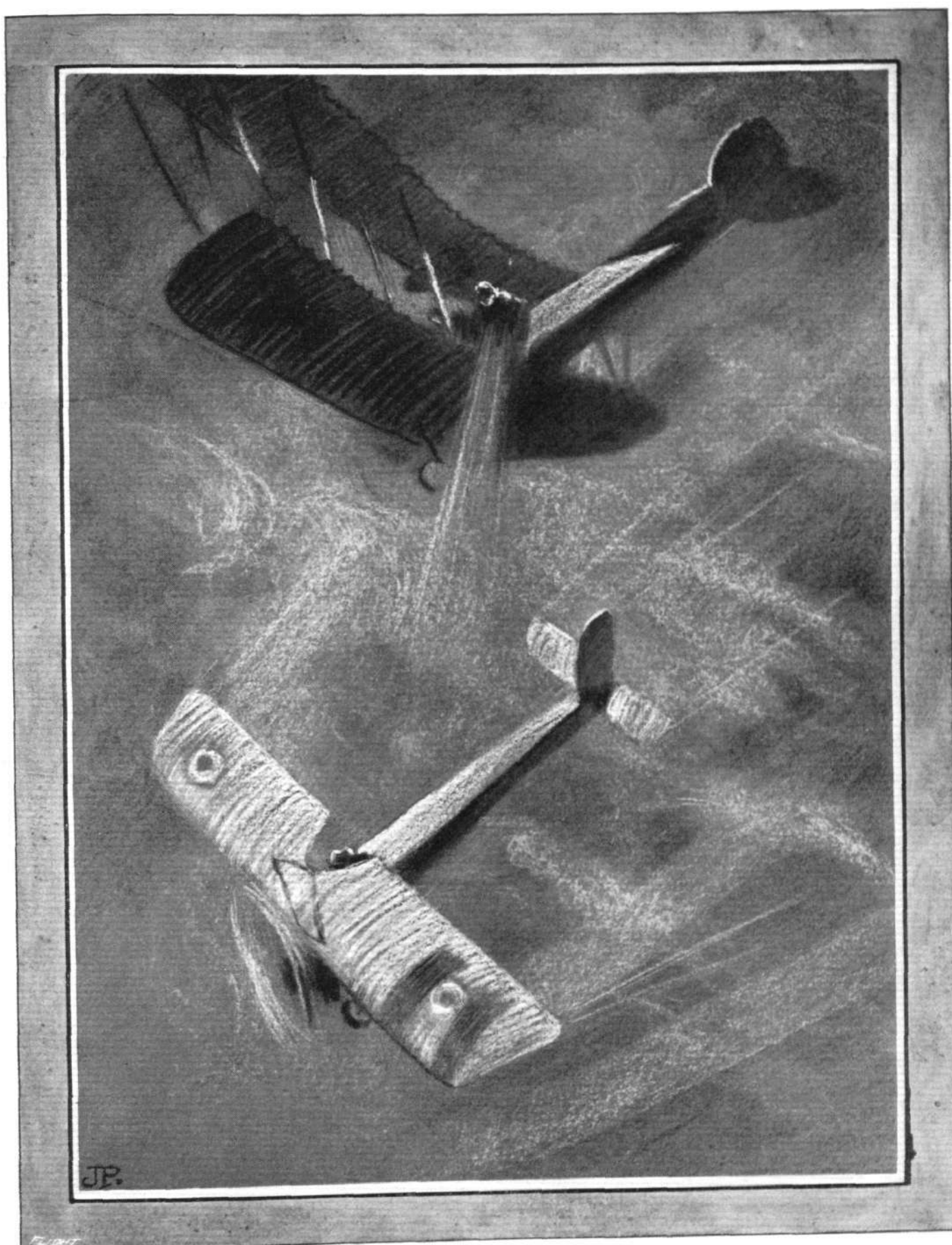
"Three Zeppelins visited the Eastern Counties last night, and dropped bombs. Anti-aircraft guns were in action. Aeroplanes went up, but were unable to locate the airships.

"Fifteen small dwelling houses were demolished or seriously damaged, and a large number of doors, windows, &c., were broken. Several fires were caused, but were promptly extinguished. There was no other serious damage.

"The following casualties have been reported : Killed, men 2, women 3, children 5. Total 10. Wounded (seriously), men 4, women 11, children 5. Total, 20. Wounded (slightly), men 9, women 5, children 9. Total 23. Missing, believed to be buried in *débris*, men 1, women 2. Grand total 56.

"All the above are civilians, except one soldier, reported seriously wounded."





THE PASSING OF PÉGOUD.—A drawing of the incident which cost the famous flyer his life. Pégoud, whilst re-loading his gun, unfortunately exposed himself to the German marksman who accompanied the enemy's pilot, and enabled the fatal shot to get home. From an original drawing by J. Prochazka.

# The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

## Aviators' Certificates.

THE following Aviators' Certificates have been granted:—

- 1669 (Hydro-aeroplane).—Lieut. Nicolas Courbelis (Henry Farman Hydro-aeroplane, Royal Naval Aerodrome, Athens). June 8th, 1915.
- 1670 2nd Lieut. Norman Gordon-Smith (Maurice Farman Biplane, Military School, Farnborough). June 13th, 1915.
- 1671 (Hydro-aeroplane).—Capt. Staoros Panourgios (Sopwith Hydro-aeroplane, Royal Naval Aerodrome, Athens). June 26th, 1915.
- 1672 Lieut. Henry Rupert Powell, R.E. (T.) (Maurice Farman Biplane, Military School, Shoreham). July 23rd, 1915.
- 1673 Capt. Paul Copeland Maltby (Royal Welsh Fusiliers) (Maurice Farman Biplane, Military School, Farnborough). July 25th, 1915.
- 1674 Flight Sub-Lieut. Henry Guy Rivers Malet, R.N.A.S. (Caudron Biplane, Royal Naval Air Station, Eastbourne). July 30th, 1915.
- 1675 Capt. Eric May Chamberlain (Maurice Farman Biplane, Military School, Farnborough). Aug. 18th, 1915.
- 1676 2nd Lieut. Denys Gilley (Maurice Farman Biplane, Military School, Farnborough). Aug. 22nd, 1915.
- 1677 2nd Lieut. Leon Ernest Eeman (Royal Fusiliers) (Maurice Farman Biplane, Military School, Ruislip). Aug. 23rd, 1915.
- 1678 2nd Lieut. Archibald Campbell Watt (Maurice Farman Biplane, Military School, Farnborough). Aug. 23rd, 1915.
- 1679 Capt. Guy Robert Howard, D.S.O. (Essex Regt.) (Maurice Farman Biplane, Military School, Shoreham). Aug. 28th, 1915.
- 1680 2nd Lieut. Petrus Andries Steenekamp (1st Dragoon Guards) (Maurice Farman Biplane, Military School, Shoreham). Aug. 29th, 1915.
- 1681 Capt. William Leslie Elder, R.N. (Maurice Farman Biplane, Royal Naval Air Station, Chingford). Aug. 31st, 1915.
- 1682 Noel Carleton Sampson (Maurice Farman Biplane, British Flying School, Le Crotoy, France). Sept. 1st, 1915.
- 1683 Lieut. Denis Beauchamp Taylor (3rd Hussars) (Maurice Farman Biplane, Military School, Norwich). Sept. 1st, 1915.

- 1684 Kenneth Edgar Kennedy (Maurice Farman Biplane, British Flying School, Le Crotoy, France). Sept. 4th, 1915.

## Aeronauts' Certificates.

The following Aeronauts' Certificates have been granted:—

- 40 Jean de Francia. Sept. 1st, 1915.
- 41 Flight Lieut. Alfred Brind, R.N.A.S. Sept. 2nd, 1915.

## EXTENSION OF HOURS OF OPENING THE CLUB HOUSE.

On and after TUESDAY, SEPTEMBER 14th, 1915, the Club House will be open from 9 a.m. to 10.30 p.m., each day, including SUNDAY.

## THE FLYING SERVICES FUND

administered by

## THE ROYAL AERO CLUB.

THE Flying Services Fund has been instituted by the Royal Aero Club for the benefit of officers and men of the Royal Naval Air Service and the Royal Flying Corps who are incapacitated on active service, and for the widows and dependants of those who are killed.

The Fund is intended for the benefit of all ranks, but especially for petty officers, non-commissioned officers and men.

Forms of application for assistance can be obtained from the Royal Aero Club, 166, Piccadilly, London, W.

## Subscriptions.

	£	s.	d.
Total subscriptions received to Sept. 1st, 1915...	9,509	19	9
Employés of A. V. Roe and Co., Ltd., for nine weeks ending August 27th, 1915 ...	64	15	11
Total, September 8th, 1915 ...	9,574	15	8

166, Piccadilly, W. B. STEVENSON, Assistant Secretary.



Scene at the Funeral at Basingstoke of the late Capt. John A. Liddell, V.C., who died from wounds received during a flying reconnaissance over Ostend-Bruges-Ghent on July 31st, the deed, as recorded in "FLIGHT," August 27th, which earned him the V.C.





"Flight" Copyright.

A PEACEFUL EVENING BEFORE THE WAR.—Another beautiful sunset at Hendon, with an Avro passing at speed.

## FROM THE BRITISH FLYING GROUNDS.

### London Aerodrome, Collindale Avenue, Hendon.

**Grahame-White School.**—Instructors during last week: Messrs. Manton, Russell and Winter. Ticket taken during week: Probationary Flight Sub-Lieut. Hodges. Straights with instructor: Probationary Flight Sub-Lieuts. Gammon, Hadow, Minifie, Biscoe, Corry, Cross, Man, Sadler, Clifford, Ford, and James. Straights alone: Probationary Flight Sub-Lieuts. Cross, Minifie, Clifford, Till, and Davies. Circuits with instructor: Probationary Flight Sub-Lieuts. Clifford, Ford, Penley, and Roach-Pierson. Circuits alone: Probationary Flight Sub-Lieuts. Clifford and Roach-Pierson. Machines: Grahame-White biplanes.

**Beatty School.**—The following pupils were out during last week:—With instructors on Beatty-Wright machines: Messrs. Bond (35 mins.), FitzHerbert (35), Hibbard (5), T. Jones (22), Litton (10), Morgan (30), Ross (10), Sampson (55), Theo (12), Thomas (30), Tolhurst (7) and Willmet (12). On Caudron machines: Messrs. Begg (15 mins.), Bowick (10), Broadbent (10), Brown (25), Byrne (20), Cadogan (25), Campbell (15), Coates (15), Collett (5), Collier (20), Cowper (35), Cumming (10), Douglas (15), Fawcett (5), Gayner (35), Grant-Suttie (20), Hodgson (10), Hoskins (10), L. F. Jones (20), Kirkwood (5), Lashmar (30), Mellings (20), Moxon (5), Nash (25), Nicholson (5), Owen (10), Rimington (35), Richard (20), Stagg (10), Symington (30), Tremlett (10), Whincup (10) and Patterson (10).

On Tuesday Second Lieut. W. N. Thomas flew for

his certificate, going through each of the tests in excellent style and making particularly accurate landings.

The instructors were: Messrs. G. W. Beatty, W. Roche-Kelly, C. B. Prodger, R. Kenworthy, A. E. Mitchell, and G. Virgilio, the machines in use being Beatty-Wright dual-control and single-seater propeller biplanes and Caudron tractor biplanes.

As seen from the list of instructors, Mr. G. Virgilio has now been added to the staff, bringing the number up to six. Mr. Roche-Kelly gave exhibition flights on Saturday, and on Sunday Messrs. Beatty, Roche-Kelly, Prodger, Kenworthy and Virgilio all gave exhibition flights. Eleven passenger flights were taken.

**Hall School.**—The weather during the past week was most unfavourable, high winds keeping the machines in their sheds on several days. The following pupils, however, are now ready to go for their certificates: Messrs. Huggan, Hatchman and Russell.

At work during the week with Instructor H. Stevens: Messrs. Huggan (34 mins.), Russell (26), Hatchman (32), all doing circuits and figure eights with *vol plané*. With Instructor C. M. Hill: Messrs. Watson (26 mins.), Littlewood (32), Wenner (28), Bayley (16), Drew (20), Hamer (6), Cook (10), Bangs (4), all doing straights and half circuits. With Instructor C. Bell:—Messrs. Stirling (30 mins.), Hall (24), Broad (10), Brandon (36), Hooker (16), Sepulchre (8), Ackroyd (8), Lieut. Dalley (12), Bond (12), Camberbirch (12), Butterworth (12), Wilkins (12), Drew (12), doing rolling practice or straights.



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Some officers who have recently obtained their pilot's certificates at the Hendon Aerodrome Flying Schools.—1. Flight Sub-Lieut. Le de Giberne Sieveking, R.N.A.S., Grahame-White School. 2. Lieut. R. C. Grant, H.L.I., Hall School. 3. Flight Sub-Lieut. R. S. Dallas, R.N.A.S., Grahame-White School. 4. Flight Sub-Lieut. F. E. P. Barrington, R.N.A.S., Grahame-White School. 5. Flight Sub-Lieut. A. M. Blake, R.N.A.S., Grahame-White School. 6. Flight Sub-Lieut. L. E. R. Murray, R.N.A.S., Grahame-White School. 7. Lieut. C. H. Dixon, Ruffy-Baumann School.



"FLYING AT HENDON," AS SEEN FROM ABOVE.—Mr. Roche-Kelly on the Beatty-Wright, taken from Mr. Prodder's Beatty-Wright.



Machines in use: Hall (Government type) tractor biplanes.

Exhibition flights were made during the week-end by Messrs. J. L. Hall, H. Stevens on tractor No. 6, C. M. Hill, C. Bell on tractor No. 4.

**London and Provincial Aviation Co.**—Pupils doing rolling last week: Messrs. Knowles and Lochett. Doing straights: Messrs. Rogers, Franklin, Jamieson, Grimwade, Burton, Renton, Hordern and Rochford. Circuits and eights: Messrs. May and Moynihan. An excellent ticket was taken by Mr. C. W. P. May.

Instructors: Messrs. M. G. Smiles, W. T. Warren, G. Irwing and C. Jacques.

The following pupils are making specially good progress: Messrs. Sargood, Rogers, Jamieson and Franklin.

**Ruffy-Baumann School.**—Considerable school work was accomplished last week in spite of a high wind that seemed to interrupt work as often as it has been able. The following pupils were out on the various tractor machines: Griffith (49 mins.), McBeane (12), Ball (12), Stewart (32), Hodgson (10), Bailey (16), Gallop (34), Rees (14), Liddell (36), Muspratt (48), Hughes (33), Prothero (23), Bailey (8), Young (30), and Belton (58). The last two pupils are ready for their certificates, and will accomplish their tests at the earliest moment. Instructors: Edouard Baumann, Felix Ruffy, Ami Baumann and Clarence Winchester.

## FLYING AT HENDON.

LAST week-end at Hendon was one of the best, as far as flying exhibitions are concerned, that we have witnessed for some time past, for although on the Saturday a rather strong wind somewhat affected the quantity—but not the quality—of exhibition and passenger flights, on Sunday there was scarcely a moment, from 3 p.m. until dusk, when there was not a machine in the air. Many Hendon *habitués* of days gone by appeared to have fixed upon this week-end to revisit old friends and haunts—or what there is left of them—for we saw several familiar faces that have been absent for more or less lengthy periods. Perhaps the most welcomed of these belonged to Mrs. de Beauvoir Stocks, who paid, we think, her first visit to Hendon since her terrible accident some two years ago. We were gratified to notice that she was looking extremely well and was able to get about without much difficulty.

After a couple of unofficial flights by two Aircraft-Farmans on Saturday there was nothing doing until 4.15 p.m., when M. Osipenko ascended on a 50 h.p. G.-W. school 'bus. Marcus D. Manton then made two very fine flights, also on the 50 h.p. G.-W. school 'bus, after which W. Roche-Kelly put up a couple on the Beatty-Wright (45 h.p. Beatty engine). Osipenko next brought out the 100 h.p. G.-W. five-seater, on which he started passenger-carrying in earnest, while E. Baumann joined the others on the 60 h.p. Ruffy-Baumann biplane. Ami Baumann also obliged on a similar make of machine. J. S. B. Winter on a 50 h.p. G.-W. school 'bus, C. B. Prodder on a Beatty-Wright (new 45-50 h.p. Beatty engine), and C. M. Jacques on a 45 h.p. L. and P. biplane were other pilots. In the evening, just as school work was in full swing, three Admiralty machines, two Maurice Farmans and an Avro, arrived from a neighbouring aerodrome, to which they returned after a short stay.

The first out on Sunday afternoon at 3 p.m. was W. Roche-Kelly on the 50 h.p. Beatty-Wright, J. S. B. Winter and Marcus D. Manton, both on 50 h.p. G.-W. school

### Midland Flying School, Birmingham.

THE following pupils were out with S. Summerfield, the instructor, during last week: C. Mentor, C. Morley, and Hoy Yan, the last two being new pupils. On straights: Mr. L. Monfea, C. Mentor, J. Tzesing, C. Chang, J. Munhon, C. Chong, C. Kayfong, K. Jok-ping, and E. Morley.

The weather being so good the last few days has enabled most of the pupils to receive extra practice, with the result that most of them are ready for circuits. Mr. S. Summerfield has been busy with a 50 h.p. Blériot that is being got ready for the purpose, and it is hoped that it will be passed over to the pupils during the coming week.

### Northern Aircraft Co., Ltd.

**The Seaplane School, Windermere.**—With instructor last week: Capt. Bell (13 mins.), Coats (16), Ingham (15), Inglis (8), Lieut. Sander (17), Part (18), Ridgway (7), and Yates (16). With instructor as passenger: Ridgway (30 mins.), Yates (18), and Reid (14). Figures of 8 or circuits alone: Macaskie (49 mins.), and Reid (10). Macaskie took first half of ticket in good style in a rising wind. Instructors: W. Rowland Ding and J. Lankester Parker. Several passengers carried. A mist in the early morning, which hung on till dispersed by a strong wind, impeded work during several days.

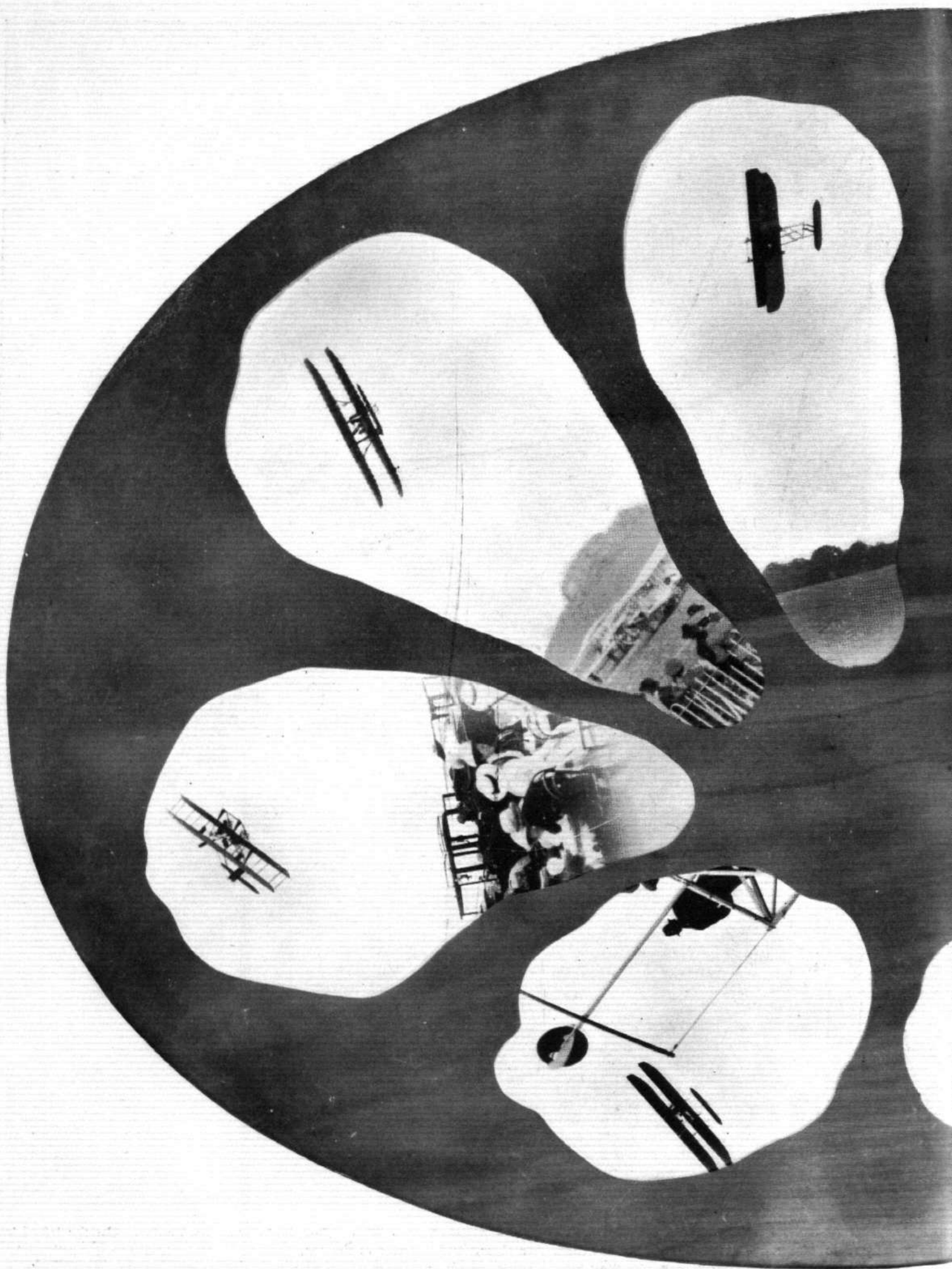
Flying on Thursday, Friday, Saturday and Sunday.

'buses, and C. B. Prodder on the 45-50 h.p. Beatty-Wright following immediately after. M. Osipenko then got going on the 100 h.p. G.-W. five-seater, whilst Winter, Manton, and Roche-Kelly made further flights. Geo. W. Beatty was the next pilot to go up, his mount being the Beatty-Wright. Prodder, accompanied by a "FLIGHT" representative with a camera, then ascended on the 45 h.p. Beatty-Wright for the purpose of enabling some photos. being obtained in the air of Roche-Kelly on the 50 h.p. Beatty-Wright. It was after these had been obtained that the nearest thing to a collision in mid-air occurred. Roche-Kelly was making a sharply-banked turn before descending, when, as he turned, Beatty in the 45 h.p. Beatty-Caudron, bore down on him without being seen until almost the last moment before the two machines met. How a disaster was averted remains to be explained. Anyway, Roche-Kelly, looking up suddenly, and seeing the Caudron about to roost on his upper plane, promptly dived, the Caudron flashing over him "like a machine in a cinema picture when it passes close over the camera," as Roche-Kelly explained it afterwards. However, all ended well, and Beatty still stuck to his cigar. In the meanwhile some of the other pilots got going, and the new "P.B." pusher scout hurtled around "some." Further additions to the pilots already out were G. Virgilio on the 45 h.p. Beatty-Caudron (Virgilio having made a move from the wilds of the aerodrome nearer civilisation), C. Bell on the 45 h.p. Hall-Caudron, E. Baumann on the 60 h.p. Ruffy-Baumann biplane, J. L. Hall and J. Stevens on the 50 h.p. Hall-fuselage Caudron, and G. Irwing on the 45 h.p. L. and P. biplane; in short, during the afternoon and evening about a dozen pilots put up over forty flights between them (not counting school flights). Osipenko had, this time, to share the honour of topping the list with Roche-Kelly with—as far as it was possible to keep count—eight flights each, Winter coming next with six, and then Manton and Prodder with five each.



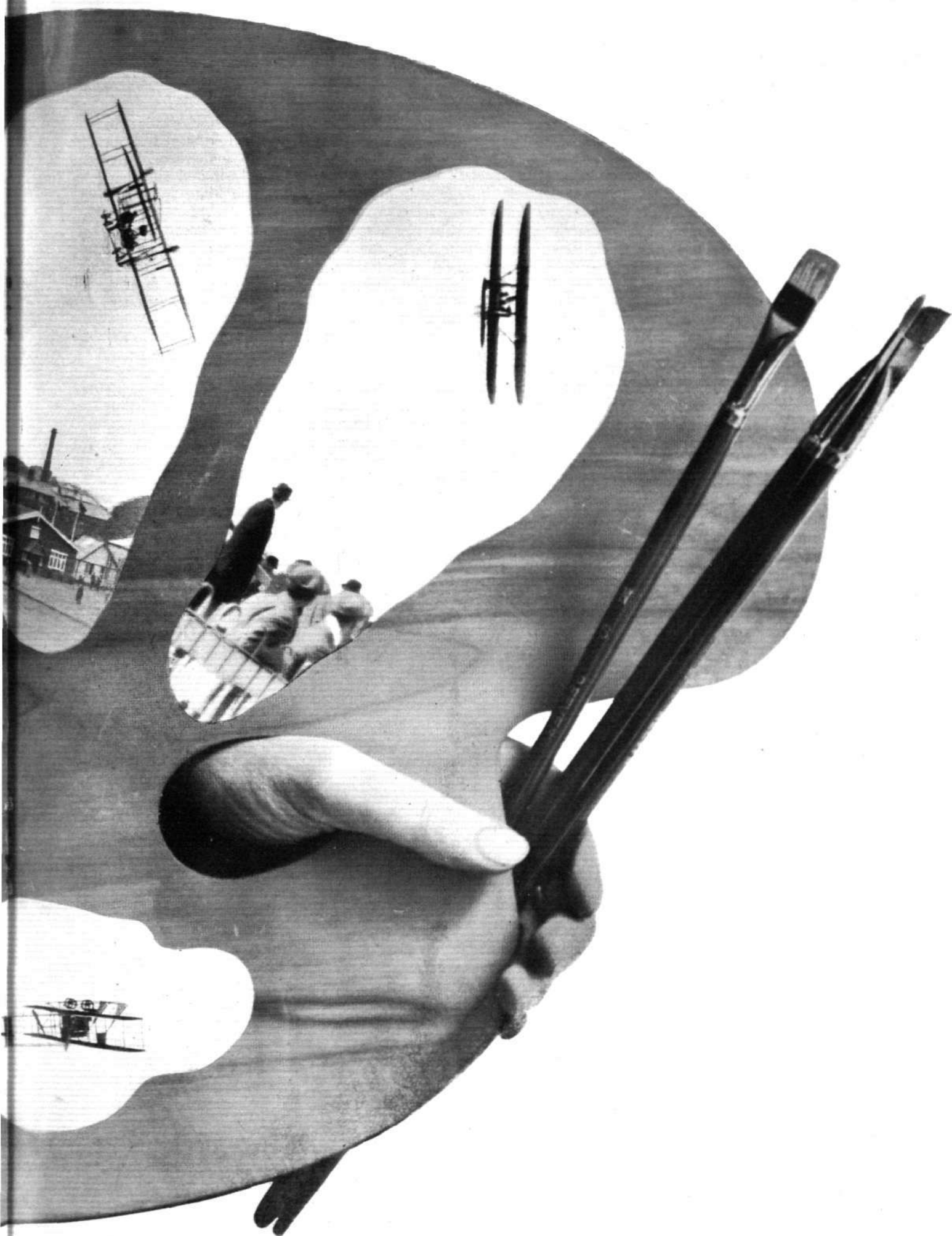
IN MOMENTS OF LEISURE.—A contrast in the Austro-Italian War. French Aviators in Venice. On the left, Lieut. "Beaumont," the winner of the Paris-Rome Air Race, 1913, Circuit of Britain, 1911, and Circuit European, 1911, and, on the right, Lieut. Baron Roulier, who was responsible for the bombing of the Sagrado Lightship on the Isonzo.





A "PALETTE"ABLE SERIES OF EXHIBITION BANKS BY MESSRS. BEATTY AND  
School is one of the most p





CHE-KELLY AT THE HENDON AERODROME.—The work of these expert flyers of the Beatty Aviation at sights at the Hendon 'Drome.

## THE LIGHTER SIDE OF EXHIBITION FLYING.

[*EDITORIAL NOTE.*—At the request of the Editor, Mr. J. C. Savage has put into writing some reminiscences of his experiences, which are presented hereunder, in connection with Exhibition Flying. Mr. Savage will be remembered as having been Mr. B. C. Hucks' business manager during the greater part of the latter's very successful career.]

I AM rather afraid that my effort at recording on paper some of the more or less amusing incidents that have materialised during my connection with Exhibition Flying will be somewhat of a failure. First of all, most of the very amusing happenings were of such a nature as not to be permissible in print at all—certainly not in "FLIGHT"—while quite a fair proportion of the remainder depend for their humour upon some little personal peculiarity of the characters involved. These latter, of course, wouldn't appear in the slightest degree humorous to anyone except those who have an intimate knowledge of those concerned in the episode.

Then, again, it's an awful business sitting down alone and trying to put reminiscences into unsympathetic black and white. Such things come to one so much more readily when in cheerful and may be convivial company at the Club. Personally, had I been the Editor of "FLIGHT," I should have asked a certain person in charge of a big aeroplane works at Hendon for some amusing passages. He would have been able to fill a whole volume of "FLIGHT" with his recollections. I am referring to Bill Law.

All the funny things seemed to happen to Bill Law, and I have implicitly believed in his powers as a *raconteur* ever since the night, early in 1910, when he told me in all seriousness that Gnome engines were nothing new, and that he had fitted them to torpedoes fifteen years before.

He would have done the job really well, and I would now advise any reader of "FLIGHT" in search of amusement to get to know Bill Law, get him in the right sort of mood some night, and—well, you'd get tired of listening before Bill Law would get tired of telling.

When B. C. Hucks and the writer made a move to set the Thames on fire with exhibition stunts, there was, to put it tersely, nothing doing. We simply had to call a committee of two and devise some sort of scheme to beat up some business. After careful discussion we hit upon a method which had the germ of good promise in it, and so we decided to give it a run. We had, by way of a start, several enquirers, but only one of these seemed at all keen.

We determined, therefore, not to let this chance slip by. We badly wanted to do some sort of business with someone or other. He was a dear old Mayor of a little town down Somerset way; and as we did not seem to be able to get to grips by writing, he determined to come up to London, where, following an interview, I almost got him to sign the agreement. But at the last moment he thought he'd like to see what sort of a fellow Hucks was before he'd close the deal. So I arranged a meeting for the following Monday. I could plainly see that the Mayor had to be *impressed*. Therefore we arranged a suitable plan of campaign.

The Mayor, accompanied by his faithful spouse, arrived punctually at our office at 11 o'clock, and I received them. I explained that Mr. Hucks was out engaged on a matter of extreme importance, but that I expected him back any moment.

Presently I gave a quiet hint to the typist to call Hucks up from the Club, one floor below, in the same building as our office.

He rushed upstairs and dashed into the office in wonderful style, just as if he had returned from completing a very big business deal somewhere. Immaculate morning clothes, exquisitely ironed silk hat, beautifully polished patent boots, fine white spats and all—a wonderful sight.

The dear old Mayor, expecting to see some sort of person in a cap and oily Burberry, with a crankshaft sticking out of his pocket, was very visibly impressed. In fact, it took him an appreciable time to get his breath. And the Mayoress too. Then we both got very busy. Hucks tackled the Mayor and I the Mayoress, with her poke bonnet and black sequins and all. And within the half-hour we had the contract signed and half the fees deposited in cash.

I have an idea that the Mayor went back home with quite a nice impression of B.C.H., while the latter and myself immediately closed the offices for the morning, shook hands with ourselves, and retired to Hatchett's for lunch and a bottle of the best.

Even now, we have a great respect for that Mayor, and I'm sure, when the war is over, that Hucks would be only too pleased to go down to Somerset and give a top-hole demonstration of flying at the town fête—and would forget to send in the bill.

\* \* \* \*

So much for the first contract we booked; and we never looked back from that point—and I might add that we never had need to use similar tactics again.

One of the first problems that we found ourselves up against was that of eliminating the people who stood outside and saw the show for nothing. Hucks had the idea that we ought to make an invisible aeroplane, and present to all those who paid admission a pair of suitably tinted spectacles that enabled the wearer to see the aeroplane perfectly. It was quite a fine idea, but we never perfected it. Then someone wrote in with the suggestion of laying a ring of perforated steam pipes all around the flying field so that we could partition off the field by a curtain of steam. Another thought that it would be a good notion to hire a mechanical road sweeper, and send it continually up and down the road leading to the flying field, so that the clouds of dust that it threw up in the air would force people to come inside the field. Someone else suggested placing mad bulls in surrounding fields, so that "deadheads" would not congregate there. We never quite solved the difficulty, although we came quite near to it on many occasions.

\* \* \* \*

"Deadheads" fell into two classes. There was the really determined and confirmed "deadhead," and there was the repentant and susceptible "deadhead." If one properly pointed out his wrongs to the latter, he would straightway pay and come in. But the former desperately stuck to his post in the hedge, and even complained if the demonstration didn't start to time, or if he didn't get a perfectly uninterrupted view of all the flying.

B. C. Hucks never lost an opportunity of breathing contempt upon the "deadhead"; and it was, therefore, with great amusement that I burst in on Hucks one afternoon at the office and found him asking Robert Loraine on the telephone if he had an empty box at the theatre that he wanted to give away.

The reader might think that Glasgow would be about the most prolific place in the world for deadheads; but from experience I can say that we had less wastage at Glasgow than we had anywhere else over the country. I should estimate that the "hedge-tickers" only amounted to about 10 per cent. of the people we had inside the ground. How we managed this is quite another story, and, moreover, quite a long one.

As opposed to the "deadhead" we often received cheques from people who saw the demonstration from their own homes quite a distance from the ground. On one occasion we had £10 from a generous old sportsman whose house was two miles off. He had a garden party that afternoon, and they all saw the flying perfectly. His cheque represented a half-crown admission ticket for each member of his party.

At one town, just when the demonstration was timed to start, we realised that there were about five times as many people lining the hedge as there were inside the ground. So, just to see the effect, we let off a terrifically loud bomb, and simultaneously lit a bonfire to give off dense clouds of smoke. The people outside, thinking something had seriously gone wrong, and not being able to see, made a rush for the gates. One money-taker at the sixpenny gate took so much money that his fingers over-heated and seized up.

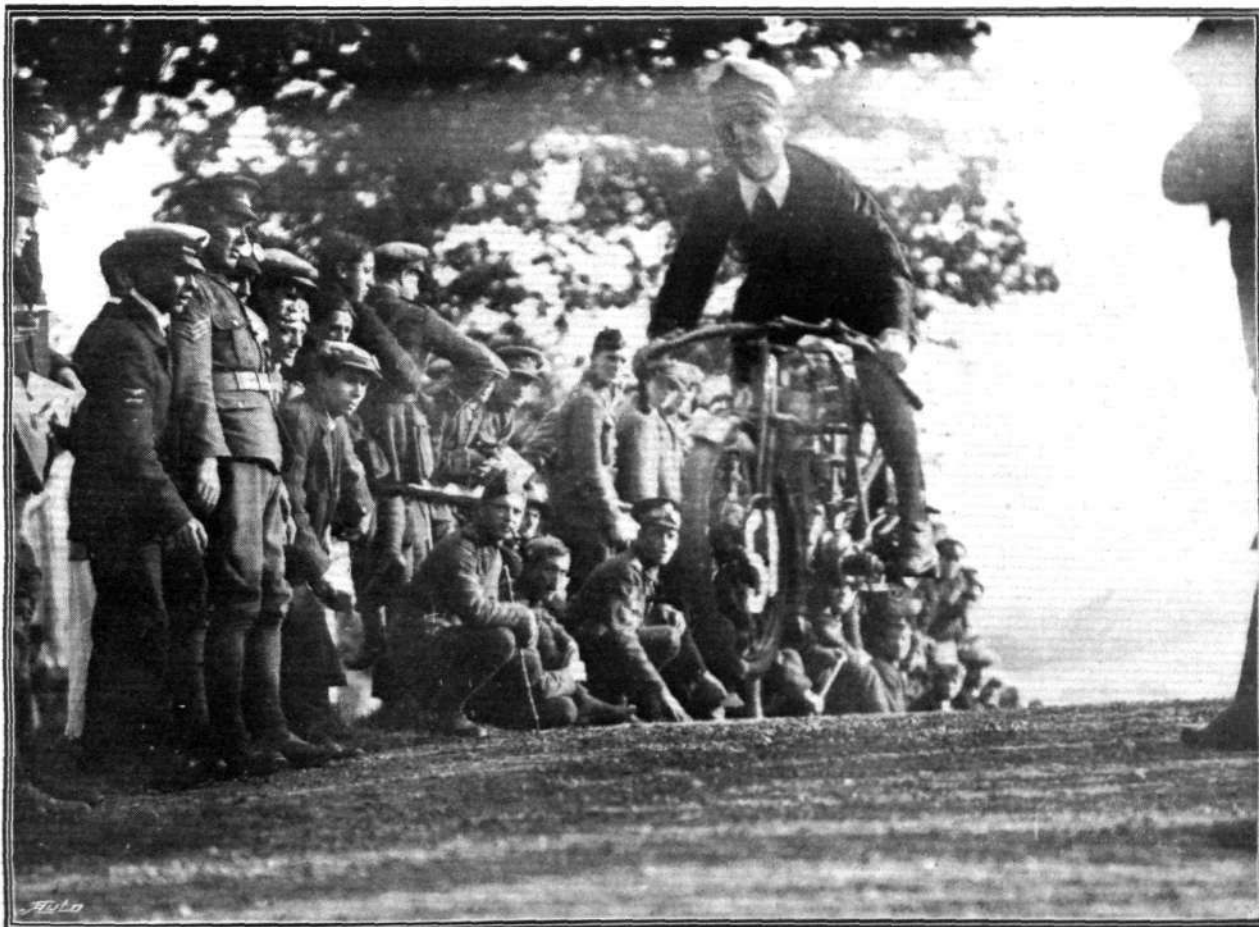
On one occasion we "filled in a date" at a small town where we had given a demonstration barely two months before. It was evident that we had to give them some-

thing new in the way of flying, and as looping the loop had not been invented then, we had to cast around for something new to attract them. Now, in this connection I frankly take full blame for what happened. But I plead to be excused on the score that it occurred very early in my career as an exhibition flight organiser.

We advertised that, during the demonstration, Professor Dryazell would make a startling leap from the monoplane at 1,000 feet in mid-air. Then we approached Brocks to make us an explosive bomb that would explode fifty feet below the machine and release a paper figure of a man which would then gracefully float to earth. This was Professor Dryazell. Why "Dryazell" I don't quite know!

Everything passed off quite well until Professor Dryazell made his "startling leap." The bomb exploded and the Professor appeared all right and started to make his descent, but somehow he didn't look convincing, so the public signified their dissent accordingly. Hucks, however, kept things going so well with his flying that I thought that there was never a one but must feel that he had had his full money's worth. And I congratulated myself innocently that the affair had passed off quite decently, until that night I heard someone in the town calling Hucks B. C. *Hoax*, while I received quite a shock when, some days later, I read a sarcastic article in the local paper, which finished up by saying that Professor Dryazell descended in Lady Exeter's duck pond "presumably in search of liquid refreshment."

But, as I said, this was a mistake I made in the very early days of exhibition flying. Later on the thing



Flying Officers at the United Services Motor Cycle Race Meeting at Brooklands on Saturday. Flight Sub-Lieut. Openshaw, on his Zenith, "jumps" the last bit at the summit of the hill in the Unlimited Hill Climb Contest.



became extremely serious, and I went about my business with the air of a side-whiskered solicitor drawing up wills.

\* \* \* \*

People that Hucks took for passenger flights were, at times, a source of amusement as well as profit.

The first passenger at any given town was generally the leader of the local contingent of "nuts." He always strode forward with bravado as soon as we invited passengers to come forward. He adroitly readjusted his check cap back to front after the approved Grahame-White fashion, he stepped into the passenger seat blithely and installed himself as though he had been used to doing it all his life. To a character student, his behaviour as a rule led to the assumption that he had, in the seclusion of his bedroom, rehearsed the whole thing well overnight.

But he generally made a fine impression, and that was good for business. The lady passengers were the ones, however, who generally gave rise to amusement.

A lady booked a flight at G— once. She was quite a smart sort of woman, and volunteered the information that she had flown with Gaudart at Monaco, Domenjoz at Buc, Hirth at Johannisthal, and lots more on the top of that. She impressed us.

She came up for her flight in a wonderful little motor bonnet—evidently quite five guineas' worth from Bond Street—with a pretty silk scarf and carrying a melancholy visaged little toy dog. In view of her extensive experience we treated her most reverently. Hucks deferentially suggested that she should leave her bonnet behind and tie her scarf tightly round her head because of the propeller draught, &c. She scornfully refused—she had flown before. Hucks offered her a pair of goggles. She scornfully refused—she had flown before. He suggested very diffidently that, at least, she should leave her toy dog behind. She scornfully refused—she had flown before.

Well, Mr. Hucks gave her quite a usual sort of passenger flight, lasting about ten minutes, and when they landed we could not make out, for a moment, where the lady passenger had got to. We found eventually that she had slipped off her seat and was lying crouched up in the passenger cockpit in a state of nervous prostration. It was really very distressing. Her pretty little bonnet had gone for good and all, her silk scarf, or what there was left of it was hanging round the rudder, and her hair was thoroughly disordered. Not having worn goggles she hadn't seen a wink from the moment the machine started. And the toy dog was in a very parlous condition. We had to lift the good lady out of the machine and carry her to the tent, where restoratives soon brought her round.

Although the incident had all the elements of fun in it, please understand, this is not meant to be a humorous anecdote, or anything like it, for we were very concerned

about the whole thing. Some time later, however, when following inquiries we found that she had recovered her composure almost immediately, a sort of slight satisfaction was with us in the idea that perhaps after all we had rendered her some slight service, for the experience had considerably modified her method of boasting of the amount of flying she had done and the number of aviators she had flown with.

\* \* \* \*

I need hardly say that the above episode was an extreme case.

It was extraordinary how kindly the general public took to passenger flying. Curiously enough, the lady passengers who were getting on in years were generally the most courageous.

I think it was at Oxford that a dear old lady of 64 booked a passenger flight. When she had settled herself comfortably in the machine, we noticed that she was pinning to her bodice a piece of white paper with something written on it. Just before the engine was started she leaned over to Mr. Hucks and said quite philosophically "If you feel me suddenly fall forward you needn't worry, I shall be all right. I shall probably have fainted, because my heart isn't as strong as it used to be." I saw Hucks looking dubiously amused at her, and then he enquired what the paper was for. "Oh," she replied, "that's simply my name and address, you know, in case anything happens; they'll know where to take the pieces to."

She had her flight, and enjoyed it immensely. She didn't faint, and her identification tag was never called into use.

\* \* \* \*

It was Mr. Hucks' practice during every demonstration to have the machine wheeled up to one of the enclosures at a certain time in the proceedings, and to stand in the pilot's seat, from which he would give a short lecture on aviation generally and invite questions from spectators. This question time generally afforded a good opening for the local clever person to air his learning in public. Hucks had a sort of prejudice against the local clever person, and if the clever one got too clever Hucks generally managed to quieten him by a terse answer.

One particular clever person put a whole string of consecutive questions to Mr. Hucks, not allowing anyone else to get an inquiry in edgeways. The clever one, as he put question after question, got more and more confident of his own importance, while Mr. Hucks and the spectators were getting more and more annoyed in the same proportion. At last he gave Hucks a loophole. He put to him the question, "Now, Mr. Hucks, isn't it true that the petrol is lead into the engine by means of a *hollow* tube?" Hucks thought a second, and then replied witheringly, "Yes, in some cases, but in our particular case we make use of a *solid* one."

## With the Grand Fleet.

IN a description by Mr. Frederick Palmer, the American author, of a recently-made visit to the British Grand Fleet, there was the following:—

"The seaplanes which were sailing over the Fleet had their home on a famous Atlantic liner, which has carried many thousands of passengers."

## The Death of Captain Liddell, V.C.

IN spite of the hope that his life might be saved, Captain Liddell, V.C., succumbed at La Panne, in Belgium, on the 31st ult., to the terrible injuries received in the exploit which won for him the coveted V.C. His remains were brought to London, a service being held at Farm Street Church on Saturday morning, the funeral, of a semi-military character, subsequently taking place at Basing-toke.

## More Aeroplanes from India.

ACCORDING to a message from Simla, the Gaekwar of Baroda has given five lakhs of rupees (£31,000) for providing aeroplanes for the front. It has also been announced that the Junagarh Durbar has presented three armed aeroplanes to the Imperial Government, and the Maharaja of Rewa a second aeroplane.

## New Quarters for Munitions Inventions Board.

IT is announced that the Munitions Inventions Board has now been removed from Armament Buildings to the premises formerly used by the Whitehall Club, in Princes Street, Storey's Gate, S.W.

While the comptroller is open to receive suggestions of all kinds relating to munitions on land, inventors and others should understand that it is undesirable to forward inventions until they have been well thought out.

## EDDIES.

It was, indeed, a pleasant surprise to see among the visitors to Hendon on Saturday last Mrs. Stocks, who, it will be remembered, was a passenger with Mr. Sydney Pickles in the regrettable accident that happened nearly a couple of years ago. While Pickles has long ago recovered from the consequences of the accident, Mrs. Stocks' convalescence has been of longer duration, but to all outward appearances she is now well on the way to become her old self again. It is to be hoped she will now be able once again to keep in touch with aviation doings, in which she was so keenly interested in the old days. It was somewhat of a coincidence that on Mrs. Stocks' first visit to the aerodrome that has witnessed so many of her flights, both the pilot of the machine, Mr. Pickles, and the owner, Mr. Lawford, who is serving with the forces, should be present.

x x x

A correspondent serving with the Indian Flying Corps, writing cheerily from Basra, Palestine, where that body is doing some very good work, says that the heat out there is exceedingly trying both for men and machines, the engines requiring the greatest attention. "The country round about," he continues, "is not what anyone would call ideal for flying, as, owing to the rivers flooding, there are miles of water, and the landing grounds few and far between. In addition to the geographical difficulties there are others, and some of the pilots and mechanics have had exciting times when forced to land, so-called friendly Arabs coming up to the landing ground armed to the teeth." However, it appears that in spite of these little discomforts everybody is in the best of spirits and cheerfully doing their "little bit."

x x x

Among the many *brevets* recently taken at the Hall School at Hendon, one deserves, I think, special mention,

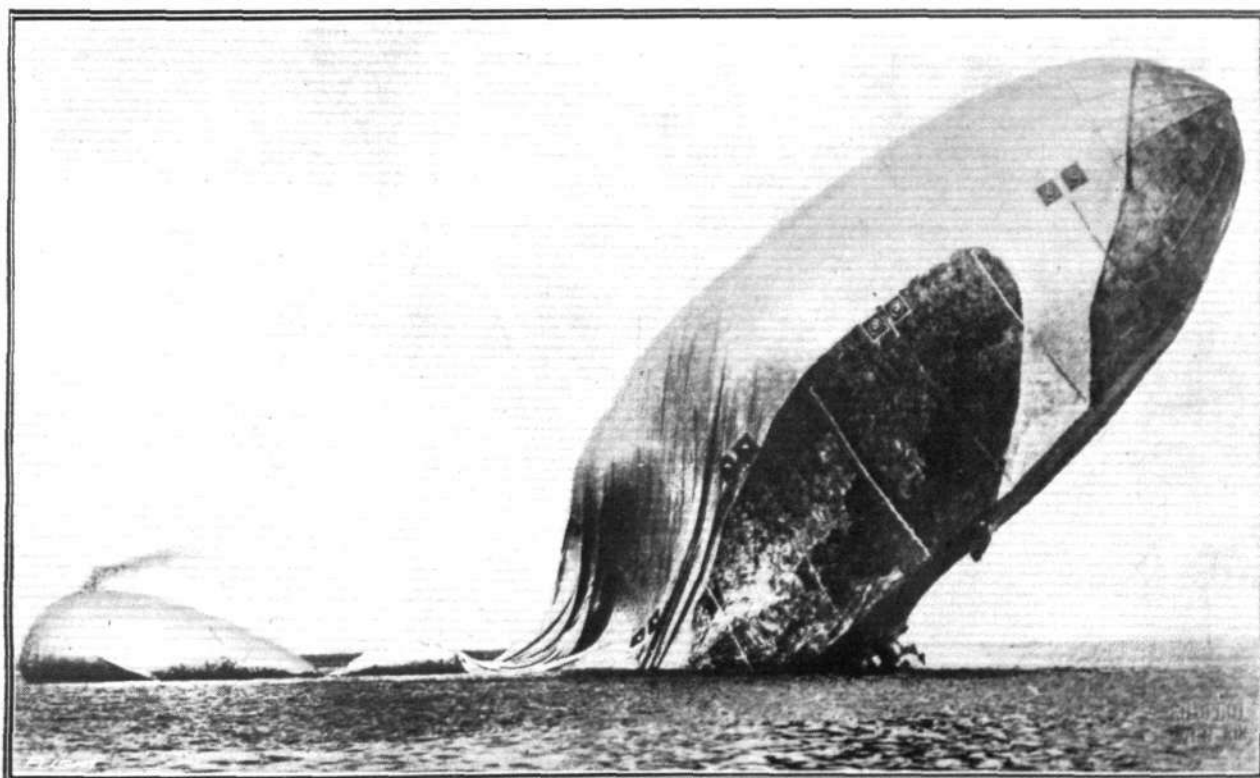
not only because it was a very good ticket—most of them are, I believe—but on account of the somewhat unusual circumstances preceding the event. Coming over with the first Canadian contingent, Corporal Goodrich was on active service at the front for over two months until he was wounded on April 23rd, the day the Germans first used their abominable poison gas, in their second bid for Calais. Corporal Goodrich was severely wounded near the right groin, and his medical officer expressed doubt as to whether he would ever be able to go on active service again as an infantryman. During his hospital leave, however, Goodrich got to work at the Hall School, with the result already given above, he obtaining his *brevet* on August 20th. He is now, I hear, trying to join up with the R.F.C., an effort in which he certainly deserves to be successful.

x x x

As I committed the indiscretion of telling my readers some time ago of Mr. Hall's *début* in a make of car that has innumerable pet names, some of which are, perhaps, more expressive than elegant, it is, I think, as well that I should mention that Hall's latest acquisition is an eight-cylinder Cadillac, the running of which is a source of envy to less fortunate drivers, and which is capable of a speed that approaches—of course on private roads only—more closely to that to which Hall is accustomed when in the air. The only respect in which the new car cannot touch the winged vehicles is in the way of noise, the engine when going all out being easily outclassed for noise by the common or household variety of purring feline pet.

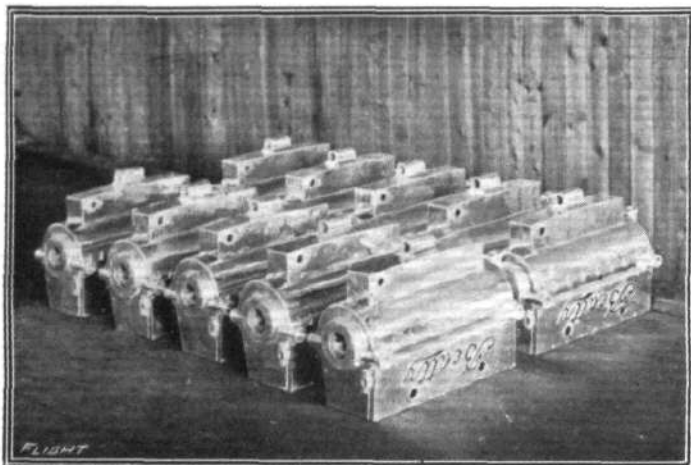
x x x

For some time past the parts have been coming in for the new Beatty engines, to which reference has several times been made in "Eddies." One of these engines, or



The loss of the Italian Airship "Cite die Tesi," which was brought down off Pola by the Austrians.—The wrecked dirigible in the sea.

perhaps it would be more correct to say parts of one, as it has the new type of cylinders with mechanically operated inlet valves, but the old type one-piece crankcase, has been doing very good work on one of the Beatty school 'buses, and has amply fulfilled the expectations of its designers. That it will soon be followed by



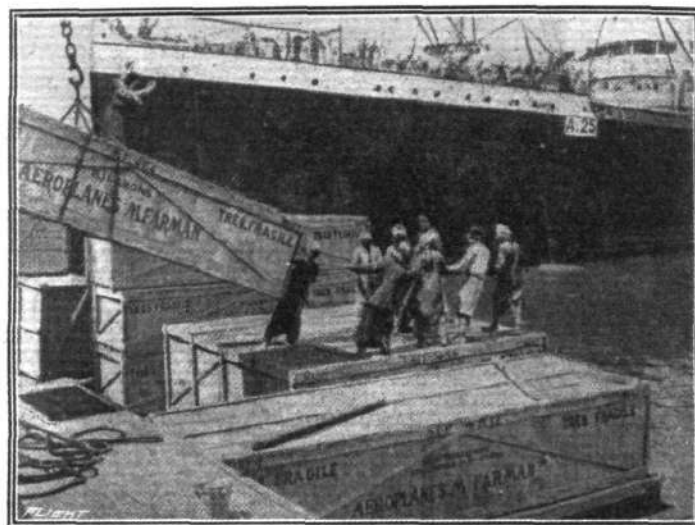
**BEATTY ACTIVITY.**—A batch of crankcases for the new Beatty engines.

a number of others is evident from the accompanying photograph, showing half a score of the new split crankcases. Other parts are floating in in corresponding numbers, and there should therefore be small chance of pupils having to wait for engine repairs, as a new motor can be slipped into place while the old one is being overhauled.

x x x

The following German report of how a French biplane was accounted for is of interest: "A French avion, which had for some time been rather troublesome to our aviators, was brought down by machine-gun fire by one of our Aviatiks near Essey. The fight was witnessed by thousands of our troops in the vicinity. The French machine was suddenly seen to turn completely over, and two little black figures, those of the occupants, to fall out. At the same time the heavy motor tore loose from its bearings and crashed to earth, while the machine itself

did a terrific tail slide and was completely smashed on striking the ground. Both the occupants fell on the roof of a house in Essey, went clean through it and were, of course, killed on the spot.

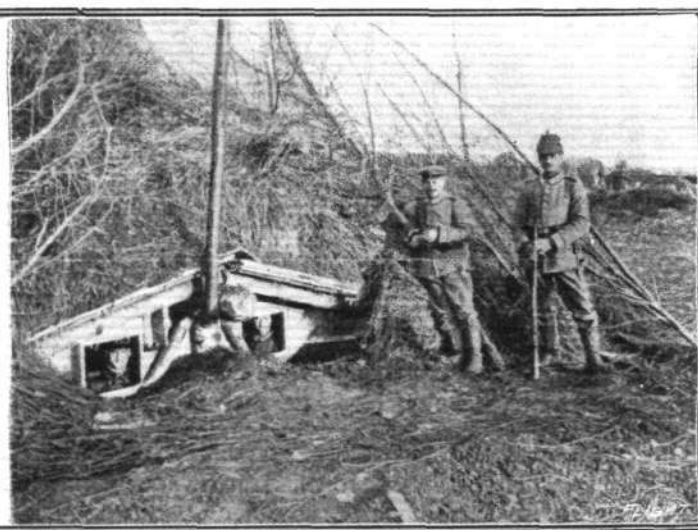


Handling a consignment of Farmans for the French Expeditionary Force at the Dardanelles.

"One of the Frenchmen, an officer, had on him a paper requesting that in case of an accident happening to him while over German territory his body be buried according to the Catholic rites, and information sent to his relatives, whose address was given. Freiherr v. G., who was in command of the section in question, saw to it that both pilot and observer were buried at Essey with full military honours, and sent a message to the French informing them of the death of the French aviators. A few days later a French pilot flew over the churchyard, and dropped a wreath of roses." In spite of reports to the contrary it is gratifying to constantly hear of incidents like this, showing that the enemy's officers as well as our own know how to honour brave men, and to maintain the traditions of officers and gentlemen.

x x x

Lemberg to Berlin in 9 hours 50 minutes is good going, and one of which the German pilot, Lieut. v. Trotha, and

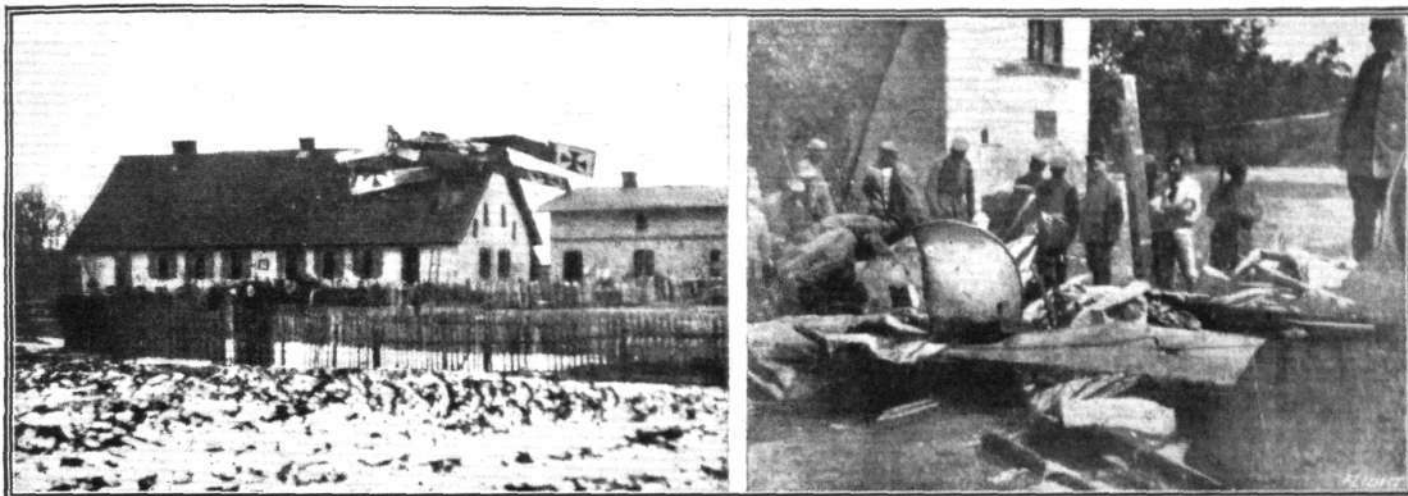


**WINTER AND SUMMER WITH THE GERMAN AVIATORS.**—The left hand photograph, taken on the eastern front last winter, shows the faithful guardian of a German tent hangar. On the right is seen the well-hidden quarters of a German aircraft division during the days of summer.



his passenger, Lieut. v. Kade, are, I have no doubt, proud. Leaving Lemberg on a Tuesday morning at 8 o'clock they flew, according to *Flugsport*, via Cracow to Breslau, where they landed on the military aerodrome at 2 p.m., having covered the distance of 600 kilometres in six hours. After refilling the tanks, the journey was continued at 4 p.m., and, flying over Görlitz-Dresden-Leipzig, the estate belonging to v. Trotha's father was

his plane from Paris to the front, and just as he arrived the German machine flew over the aerodrome. Gilbert went up in pursuit immediately, and as the Boche saw that his enemy flew faster than he, he made a dive behind a cloud. So did Gilbert. As he did not see the German anywhere, Gilbert switched off, and managed to locate him by the noise of the engine. He then succeeded in approaching his quarry in a favourable position, and fired



**TWO SMASHES.**—A German Aviatik gone home to roost on the roof of a Russian farm-house, and, on the right, the remains of a French machine, the pilot of which was killed by a German aviator, with the result that the biplane crashed to earth throwing both occupants out.

reached at about 7 in the evening. After spending the night here a start was made the next morning and Johannisthal was reached 1 hour 5 minutes later. The total distance covered was 1,050 kilometres, and the two officers intend to make the return journey shortly.

x x x

From a correspondent in Holland the following translation of a report in a German paper is to hand: "A big German biplane had for some time dominated that part of the front where Gilbert was on duty. This plane was so big, and flew and climbed so rapidly, that, although it had only one motor, this must have been of 200 h.p. In front and behind the pilot were mounted two machine guns. It had brought down several French Avions, and was looked upon as unconquerable. Even Gilbert had been obliged after a fight with this machine to descend with holes in his petrol tank. He went back to Paris in order to get a new mount, a Morane-Saulnier monoplane with a 90 h.p. motor and a machine gun. Gilbert flew

a few rounds at him, which seemed to reach his objective, as the German began to descend very steeply. Gilbert's motor was also hit, so that it ceased business. Both machines then came down with a terrific speed, firing all the time. The German hit the ground first, smashing his chassis, Gilbert following with a landing quite close to him. The German pilot is said to have been Victor Stoeffler, of the Aviatik works."

x x x

The same correspondent reports that, according to *Flugsport*, the Russians are using Deperdussin monocoques, single seaters and two-seaters, the last mentioned being fitted with machine guns. If this be correct it would seem that the Russians are using not only their Sikorskys, but also various French monoplanes such as the Deps. mentioned in this report, besides the Moranes referred to by the same correspondent some little time ago.



**Enver Pasha**, the Turkish Minister of War, who was responsible for Turkey joining with the Germans, inspecting aeroplanes at their base before going to the Front.

It appears that Russia and Germany are not alone in having giant aeroplanes, as, according to a letter written by Mr. M. S. Bates, of the Sperry Gyroscope Co., to the American *Aerial Age*, Italy has one huge biplane completed and several more under construction. "Each machine," he says, "is equipped with three Isotta-Franchini 6-cylinder 150 h.p. engines. The dimensions are: Span, 85 ft.; length, 50 ft.; height, 14 ft.; chord of wing, 10 ft. The wings are staggered; the lower plane is nearly flat on its under surface, while the upper surface has a camber of about 4 ins. There is no dihedral, and



## New German Aeroplanes.

THE *Morning Post* correspondent at Copenhagen, writing on Tuesday, said:—"A story is current here that a huge German flying machine of a new type has been completed at Stuttgart, and has made its first journey to Friedrichshafen. A mechanic, just returned from Germany, describes the machine. Its width, he says, is 42½ metres, it has three motors of 100 h.p. each, and three propellers, is able to accommodate eight persons, and carries five machine guns and 120 bombs. The type is asserted to be an improvement by the Germans on a Russian machine captured at the beginning of the war in East Prussia. The new aeroplanes, it is asserted, are being built to attack England in circumstances where Zeppelins have hitherto failed."

To this message the *Morning Post* attached the following comment:—

"This report, with its gratuitous details as to the latest instrument of 'frightfulness,' is obviously circulated by the German authorities for their own purposes."

## German Seaplanes Wrecked.

AN Exchange message from Copenhagen on September 6th stated:—"The Danish fishing-boat 'Christence' from Esbjerg has saved two Germans who lost their seaplane, which was wrecked in the North Sea in bad weather. Subsequently a German steamer took the two survivors, together with the wrecked aircraft, and conveyed them to Germany."

According to other information from the Danish capital, a German seaplane broke down off the Slesvig coast on September 4th, and was towed to the south by a German trawler. The airmen were rescued after passing a long time on the water in the wrecked machine. A Danish steamer also reported having seen a German aeroplane fall into the sea, apparently with broken wings.

ailerons are fitted to the upper plane only. The landing chassis is a combination of the H Farman type, with two wheels placed forward under the central nacelle. The tyres of the six wheels are 935 × 135 mm. The machine has dual control, and is designed for four passengers—pilot and assistant side by side, and observer and mechanic seated in front. The full capacity is eight hours, but at present no provision has been made for bomb-carrying. The machines are to be fitted with Sperry stabilisers.

"ÆOLUS."



## A New Zeppelin Base.

A MESSAGE from Kolding, Denmark, *via* Copenhagen, to the *Daily Express*, states that the German military authorities are building at Toender, in North Schleswig, an enormous shed for Zeppelins, surrounded by anti-aircraft guns.

## New Type of Zeppelin.

WRITING from Berne on August 31st, the *Morning Post* correspondent said:—"Friedrichshafen has just produced several new airships capable of carrying twenty men each, and they are now being tried over Lake Constance. They differ in shape from the Zeppelins, and make considerably more noise when in the air."

## An Invisible Zeppelin.

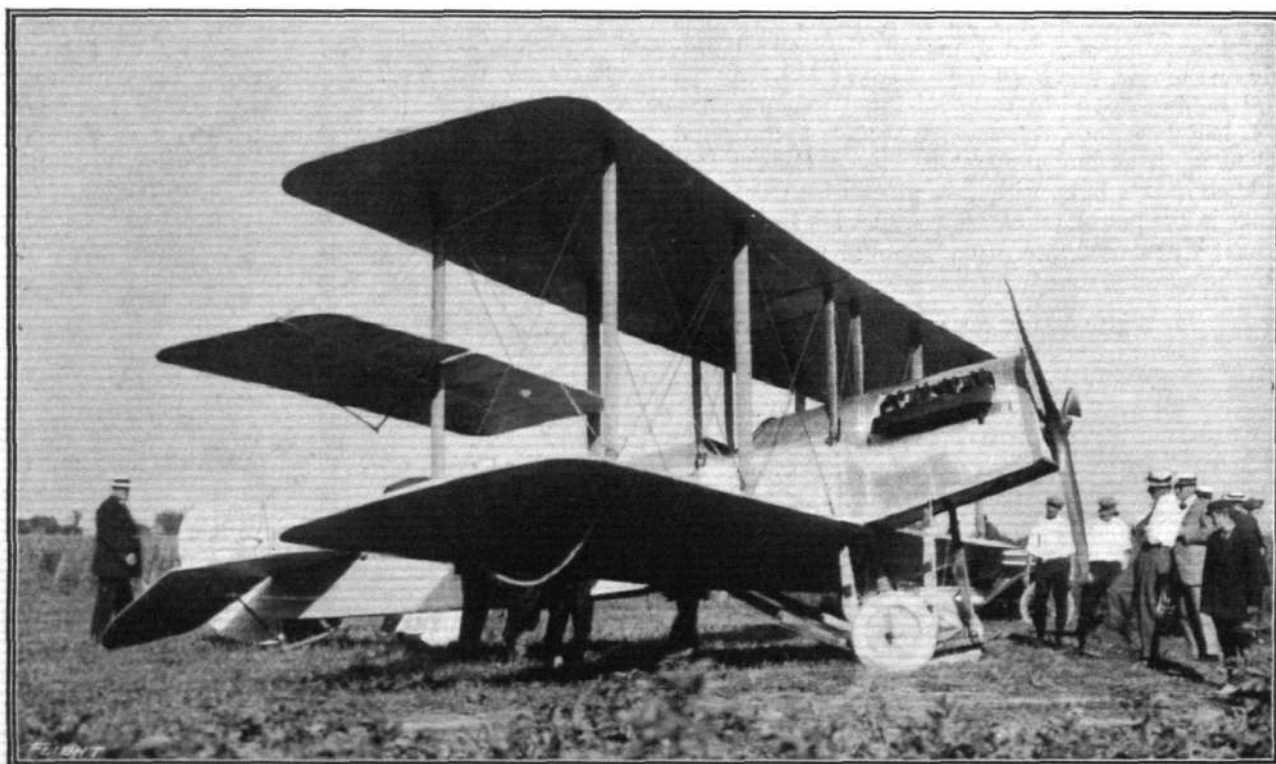
THE *Daily Mail* correspondent at Vevey, Switzerland, writing on the 2nd inst., said:—

"Another new Zeppelin, the second in six weeks, has just left the sheds at Friedrichshafen. A new fabric has been employed in the construction of the envelope, and, according to Swiss reports, the trials held on Lake Constance were most successful, the airship being almost invisible at quite a moderate height."

## For Destroying Zeppelins.

WRITING from Paris on Saturday, a *Standard* correspondent said the war has served as a great incentive to inventors, and the French Academy of Sciences is busily engaged examining the numberless projects that come in daily.

One invention, now seriously occupying the attention of the Academy, is a device that permits two cannon to fire simultaneously two shells that are joined together with a wire. The device is intended for fighting the Zeppelins, the inventor claiming that the dirigible caught by the wire carried by the projectiles would be cut in two.



The new model R-2 at the Curtiss "Aerodrome," Buffalo, N. Y.



## ARMCHAIR REFLECTIONS.

By THE "DREAMER."

THE great leader and master in the fantastical occupation of imposing upon people was the famous Homeric Ulysses, who told long tales to Alcinous and his silly Phæacians about King Æolus and the winds which were his slaves.

So likewise one Jambulus wrote many incredible wonders of the great sea, that are too palpably untrue for anyone to suppose they were not of his own invention, though very interesting to read. Ctesias, also, indited an account of India in which he records matters which he neither saw himself, nor heard from the mouth of any creature in the world.

Now, as I also cannot resist the vanity of transmitting to posterity certain little efforts of my own, I have once more invaded the pages of my favourite journal, and taken up my old position in the armchair to reflect.

Nothing memorable has ever happened to me in all my life except getting born. This event happened so very long ago that I have forgotten the details of it, but I believe I played the lay figure with crying success, therefore it is impossible for me to write of the great adventures which never have happened to me, even though they be entertaining as those of Louis de Rougemont.

I do not wish, like the writer of old, to entertain you with romancings even though they might while away an idle hour. It is but left to me to write of things as they appear to me, though that they shall be interesting shall be my earnest endeavour, and if I can make this page entertaining to my readers (if I have any) my re-entry will be in some measure justified.

It is many months since I last perpetrated this page, and much has happened in the interim: England was not then at war. Many moons have come and gone since the Russians passed through our country, and the thousands of my acquaintances who suddenly found themselves possessed of railway porter cousins, have returned to their normal number of relatives. The story of the angels at Mons has attained an even more nebulous state to-day than the principals in the scene. The Germans have not yet reached Calais, neither is it certain that the Russians will lure them to Moscow so that history may repeat itself.

Squabbles there have been in plenty over munitions and what not, until one's head has become muddled with the reading, and until in sheer desperation we have said: "Leave it to Kitchener," which is exactly what we were going to do all the time, only we did not know it. Amidst all things having relationship to this horrible war—and what has not?—aviation, with which we of this journal and our readers are more closely connected, has stood out a glaring success from the very commencement, and this, the previously untried arm of the service, of which none were in a position to prophesy with any degree of even moderate certainty.

It is, I suppose, somewhat difficult to gauge just what effectiveness a certain thing will have in warfare until it has been tried under fighting conditions, although with such things as big guns, torpedoes, submarines, and a variety of other weird methods of striking a blow, operations are undertaken in peace time to ascertain their powers, and very effective and accurate knowledge gained.

As a civilian, I am naturally not in a position to know what was going forward in military and naval aviation, otherwise I should not be allowed to tell you my views, but it is my opinion that when I was last writing these

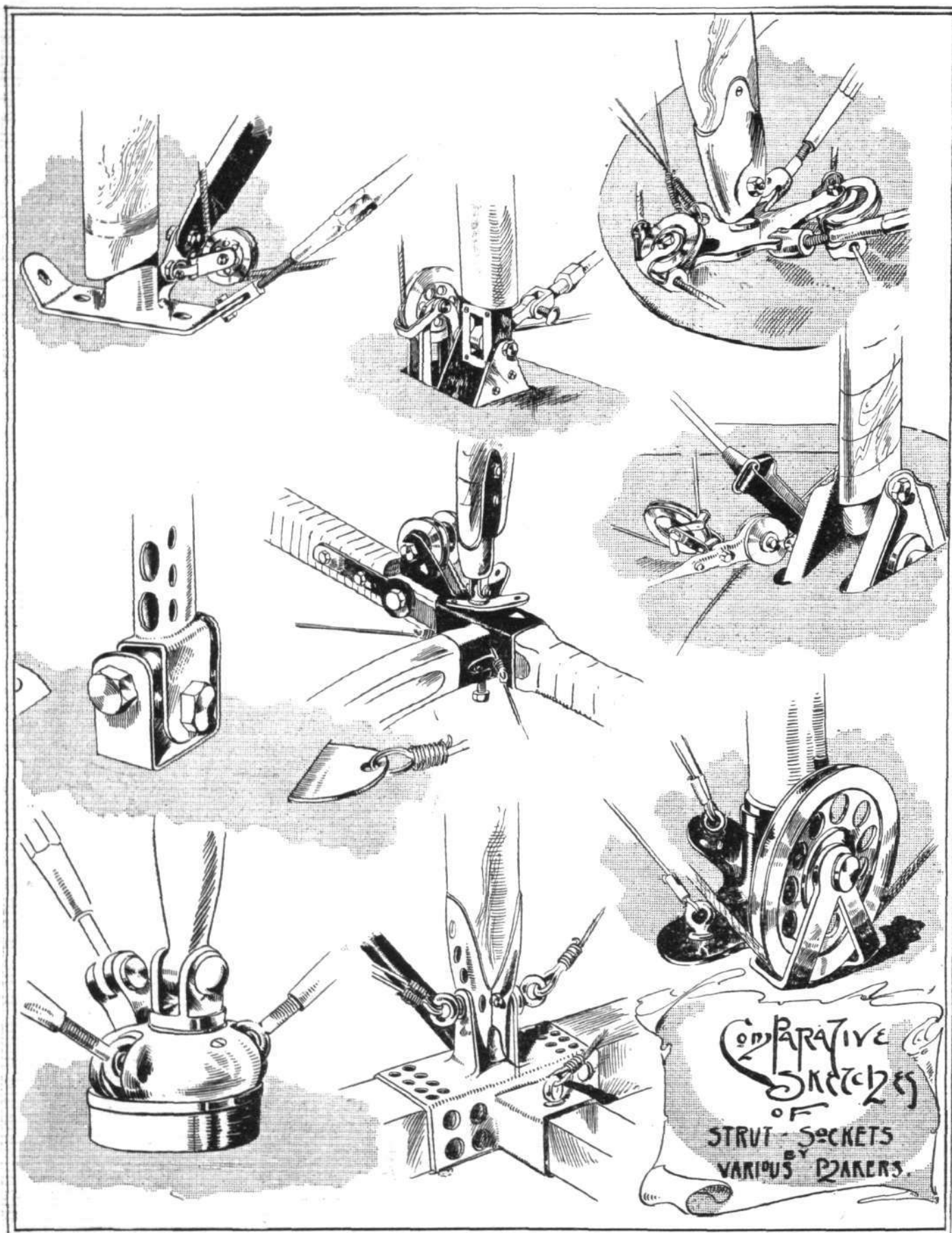
reflections not overmuch thought had been given to flying as a service except as to its value for reconnoitring purposes. I do not believe that we had anything serious or standard in the way of bombs, or any method of launching them short of just heaving them overboard. That we have got to work on it now is gloriously true, and that we have done it to some tune is evidenced by the reports from overseas: I should not like to live in a military town raided by the Allies air squadrons.

I never had much opinion of the huge fighting Zeppelins as a unit in comparison with the aeroplane, and although I have now been one of the objects of their close—too close, I will admit—attention on two occasions, my view is not altered. Their initial cost, maintenance, and capital loss if unfortunate, is out of all proportion to the damage they can do, which, frightful as it is, is very local, and not easily repeated. A Zeppelin raid of any importance is a large affair, takes days to prepare for, involves grave risks to a very valuable and brave crew, and does little more damage than an aeroplane, which, moreover, can return to strike again in a comparatively short time. It has, in my opinion, but one value over the smaller machine, it can strike a blow a long way from its base. I would far rather be in a town bombarded by a Zeppelin than in one bombarded by its money value in aeroplanes. I go out into my garden every night just before retiring for the night to listen for their approach, and although they have only been twice, I have had many a cool, quiet smoke under the creeper-covered arbour, and I find it one of the best anti-Zep. tonics extant. Try it. You'll find you can smoke 'em off like wasps.

Twelve o'clock midnight, Tuesday, September 7th. I feel quite like a war correspondent, I am writing under fire. There is an old saying, "Speak of the Devil, and he is sure to appear." Hardly was the ink which went to form the word "wasps" dry on this paper, than several explosions in quick succession told me that once more the enemy's aircraft were carrying murder over the land. In other respects it is a beautifully peaceful night. There is hardly a breath of air, and the firmament is scintillating with stars. In the distance I can hear the rumble of trains, and everything seems much as usual. Yet somewhere up there, many thousands of feet above the earth, the very latest form of locomotion is being utilised to carry death and destruction to innocent civilians, women and children. When I remember that this very evening when I was leaving "FLIGHT" office, these aircraft were overseas, and only preparing for their ghastly business, I realise the progress of air navigation—it is but six years since Blériot crossed the Channel in his little 28 h.p. machine.

We have grown so used to war and war conditions these last few fateful months that it requires some effort and concentration of thought to remark the changes that have taken place. Next week, unless a German bomb should find a billet in my little place, I will try to place before you the alterations as I see them, not only in aviation, but in our mode of living. Should the worst happen in the interim, it won't make any difference to those left. Let's fight on to an honourable victory. We know what the end of the journey will mean to us; what matters though the road be rough, and some of us are shaken out by the roadside. We are fighting for civilisation, the cost we will consider afterwards.





CONSTRUCTIONAL DETAILS.—Various methods of attaching the inter-plane struts to the wing spars.

## CONSTRUCTIONAL DETAILS.

ALTHOUGH a comparatively high state of efficiency has been attained in the construction and design of the aeroplane, nothing approaching standardisation has yet been reached, and when one comes to look into the matter it is found that for any given constructional detail there exists almost as many ways of carrying it out as there are constructors. While in itself standardisation is a much-to-be-desired asset from the point of view of maximum output, the aeroplane, even in its various types, is still very far off anything like finality, and hence it is impossible that its various component parts should as yet have settled down to the state of uniformity which makes for rapidity of production. Besides, too early standardisation carries with it a danger of stagnation in design, which tends to bar the road of progress and leaves little scope for originality.

When speaking of standardisation of constructional aeroplane details, it should be pointed out that this may be of two kinds—one with reference to types, and the other, which might be described as dimensional standardisation, having regard to details that may be similar in type but which differ in size. To deal with the last-mentioned form would obviously be outside the scope of a series of comparative sketches, whilst such a series as that of which we publish the first this week should be of interest to our readers in showing the variety of ways in which the same object may be attained by different designers.

Our page of illustrations this week shows a number of interplane strut sockets. In our next and following issues we hope to be able to continue the series with comparative sketches of other details.

## AIRCRAFT AND THE WAR.

THE *Morning Post* correspondent at Stockholm, writing on September 1st, said:—

"A telegram from Helsingborg states that the Swedish steamer 'Murjek' was recently hailed in the North Sea by the Zeppelin 'L 13.' The airship hovered above the steamer for some time, then suddenly descended to the level of her masthead, and after receiving details from the captain on the bridge regarding the port of departure and destination of the vessel, rose again and disappeared, travelling in a westerly direction."

According to the *Telegraaf* of September 2nd, some days previously two bombs exploded at Zeebrugge, causing serious damage. One woman was wounded. A person who said they were dropped by German airmen was arrested.

Writing from Northern France on August 31st, a *Daily Chronicle* correspondent said:—

"After a vain attempt to bombard Montdidier, a small town in the Somme department within a few miles of the front, the Germans resolved to try dropping some bombs on it from an aeroplane."

"Two days ago a Taube flew over the French lines with this object, but he was quickly perceived, a French airman going up in pursuit. The same kind of aerial fight ensued as that which terminated in the fall into Senlis Forest of one of the enemy airmen who tried to fly over Paris."

"Riddled with bullets from the French aviator's quick-firer, the pilot of the Taube was killed, and the machine fell to earth behind the French lines."

On Friday, August 27th, in the afternoon, the *Handelsblad* received from a Belgian source the following:—

"A French aviator flew over Brussels and its vicinity for an hour dropping several bombs on the barracks at Etterbeck. Most of the bombs hit the objects at which they were aimed. The Germans shelled the aviator, but without success."

A Reuter message from Catania on Sunday regarding the conditions at Smyrna said:—

"The town has suffered considerably from aeroplane bombardments. The Turks have built a new entrenchment which they have armed with coast artillery."

Writing from Paris on September 3rd, the *Times* correspondent said:—

"Two airmen N.C.O's., Bertin and Boyer have just been mentioned in an order of the day for having brilliantly accomplished a dangerous mission over the lines of the enemy, and the former has been awarded the Legion of Honour. The two airmen set out together on a mission to a village near which Bertin was to alight four miles farther away than the point determined for Boyer's descent. While passing over the enemy's line, Bertin was wounded in the leg, but continued his journey. Boyer arrived at his destination safely, but in alighting his machine capsized. He immediately set fire to it, and started out to regain the French lines on foot."

"Bertin had by this time accomplished his mission, and on his return perceived the fire near the point fixed for his comrade's descent. He at once alighted, took Boyer as passenger and

regained the French lines. Bertin's machine was heavily shelled, not less than 9 holes being made in it by bullets and shell splinters, while one of its struts was broken."

The *Times* correspondent at Venice, writing on September 7th, said:—

"Two Austrian seaplanes on Sunday afternoon dropped bombs near Chioggia without causing any damage."

"One of the seaplanes was brought down and sunk by Italian guns."

"The two officers were made prisoners."

A Reuter message from Paris on September 7th stated:—

"Last night a German aviator flying at a great height over Chavannes-sur-l'Etang, an Alsatian commune on the old frontier, dropped a wreath bearing the inscription, 'In memory of Pégoud, who died a hero's death, from his adversary.'"



NOT EASIER SAID THAN DONE.

She: Are you copper-bottoming 'em, my man?  
He: No, I'm aluminiuming 'em, mum.

## SOME AMERICAN AERO ENGINES.

### THE DUESENBERG.

THE motors manufactured by the Duesenberg Motor Company of St. Paul have achieved considerable success in automobile and motor boat work, whilst the standard models have also been employed as aero engines, and as such have compared very favourably with the average engine specially designed for aeroplanes. In view of

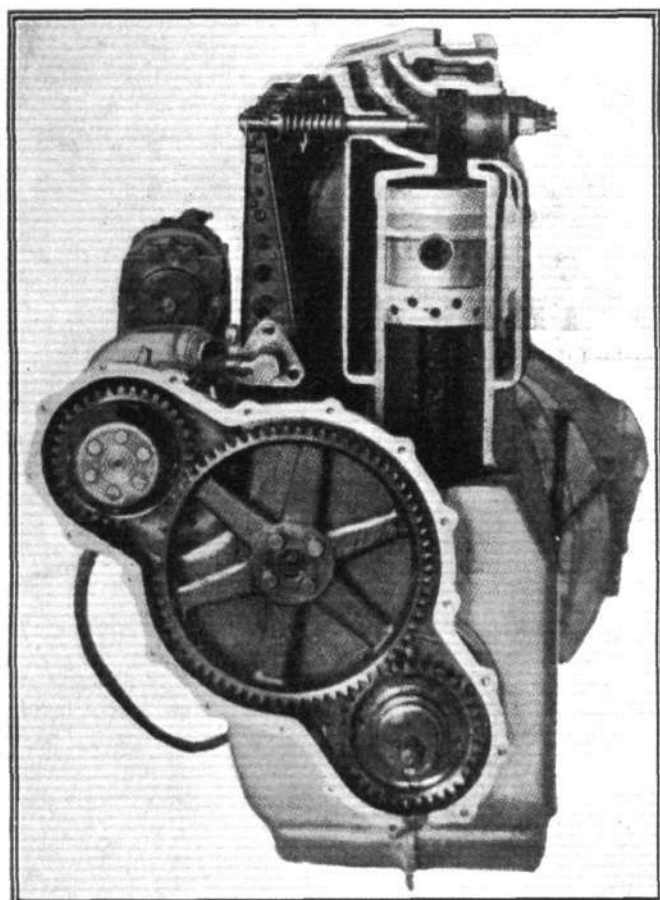


Fig. 1.—Sectional view of the Duesenberg motor, showing the valves.

this, a model was designed solely for use on aeroplanes; this has all the characteristics of the standard model, but is made considerably lighter.

The Duesenberg is a 4-cylinder vertical water-cooled engine having a bore of  $4\frac{3}{8}$  ins. and a stroke of 6 ins. The normal engine speed is 1,500 r.p.m., when about 70 horse power is developed, but increased to 2,000 r.p.m. the horse power is about 80. The cylinders are cast *en bloc*, and the valves are located in the centre of the head in the somewhat unusual manner shown in Fig. 1. Inlet and exhaust valves are arranged horizontally side by side, the manifolds curving gradually upwards, giving an extremely free passage for the gases. Valve caps are provided immediately opposite the valves by means of which the latter can very easily be removed. The sparking plugs are inserted in the valve caps, so that the spark occurs near the centre of the combustion chamber, assuring a rapid explosion of the mixture. The valves, which are of tungsten steel, are  $2\frac{3}{16}$  ins. diameter, and have a lift of  $\frac{3}{8}$  in., giving a clear opening of  $2\frac{1}{16}$  ins. They are operated from a single camshaft by long rocker arms. These latter are of pressed steel with welded and hardened contacts bearing directly on the cams. They have very little angular movement,

thereby causing but little wear on their centre bearings, whilst the push on the valves is, owing to the length of the arms, more in a straight line, so that there is little if any side-thrust on the valves. The valve springs are held by a taper split pin and a cup washer, and the shaft on which the arms are mounted has oil forced through it from the oil pump to each arm bearing and through ducts in the arms on to the cams. The pistons are constructed of a light alloy, and are so designed that most of the heat is carried away from the head by means of extensive ribbing, which also adds to the strength and stiffness of the piston. There is a triple ring in one groove in each piston which is of ample length for ensuring good wearing qualities. Extra lightness is obtained by drilling holes in the skirt of the piston. The connecting rods are of I section chrome nickel steel heat treated, and are 12 ins. long. The gudgeon pin is held rigidly by the small end of the connecting rod, and has bearings in the piston. In order to give maximum strength with minimum weight the gudgeon pins, which are  $1\frac{1}{4}$  in. diameter, are bored out tapering to the outer ends, and are case hardened and polished. The crankshaft is of chrome nickel-steel,  $2\frac{1}{4}$  ins. diameter, and has two bearings only front and rear, the two inner connecting rods bearing on the same crank pin, as may be seen in Fig. 2. The front bearing is 4 ins. long and the rear one  $4\frac{1}{2}$  ins. The cams are

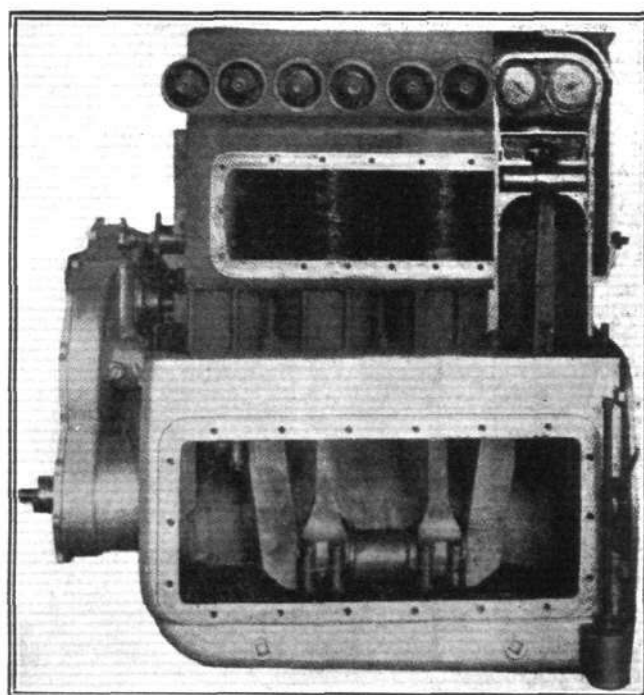


Fig. 2.—Sectional view of the Duesenberg motor, showing the crankshaft.

integral with the camshaft, which is supported on three "Non-gran" bronze bearings. The barrel type crankcase contains the oil reservoir, and has a large inspection plate at the side. Lubrication is a combination of forced and splash, a pump forcing oil from the main oil tank direct to all bearings, from which the oil overflows into variable level troughs. A second pump delivers the oil from these troughs back to the main oil tank. The connecting rods and cylinders are lubricated by splash from the troughs.



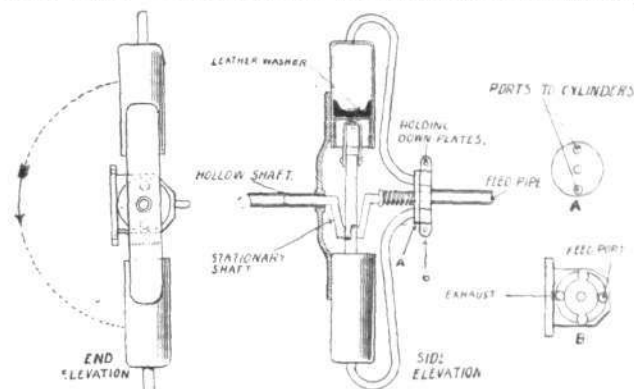
# Models

ALL communications in connection with this section should be addressed to the Model Editor, "FLIGHT," 44, St. Martin's Lane, London, W.C. Correspondents are requested to write on one side of the paper only.

## A Compressed Air Engine.

MR. K. W. G. PINNEY sends the following description and drawings of a C.A. engine he has recently completed:—

"The engine works well, except for a certain leakage past the pistons. The pistons are fitted with rather inefficient leather cup washers, and if well-made washers were used I feel sure that the leakage would be greatly reduced, as the leakage at the valve faces is slight. These faces have been cut from a double-acting



oscillating cylinder, and although the complete engine only weighs 1½ ozs., the weight could be reduced by filing down these parts.

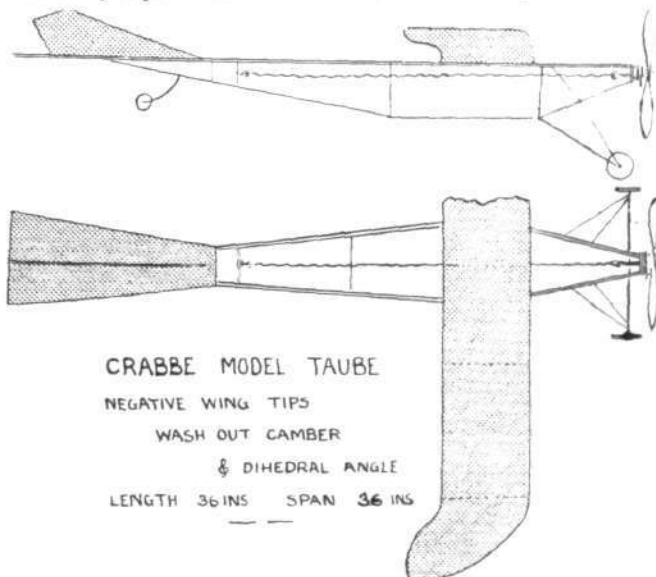
"I have connected the engine to a small tank, which I could only pump to a pressure of from 50 to 60 lbs. per square inch. At this pressure the engine swings a 12 in. Normale propeller in fine style.

"As regards leakage, I think I may safely state that my engine is better in this respect than an autoplan plant which I possess. At present I am considering the advisability of fitting the engine to a pusher biplane."

## Model Work in Australia.

From Melbourne Mr. H. Wallace-Crabbe writes as follows:—

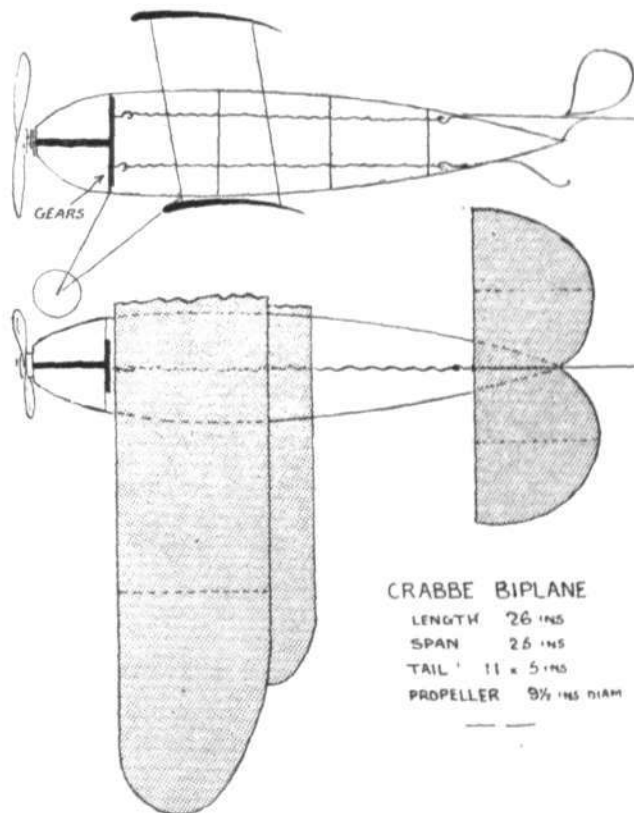
"Having seen in your columns that you will be pleased to accept any histories of model-making, &c., I thought I would jot down some of my experiences. I was induced to take up model aero-



planes in 1909 by a relative of mine, who was present at the Blackpool meeting, sending me various postcards and photos. of the early Blériot, Farman, and other machines, and I finished my first model about December 20th. It was, if it could be called a machine, a sort of Blériot with zinc planes, a two-stick body, and a small (1s. 6d.) clockwork motor, the propeller was made from two pieces of cane pinned to a tin centre. Of course, when I tried it, it was no good, and was immediately scrapped to make the next model, which turned out something like a Windham machine. For

my first hundred machines I used the same clockwork motor, but, of course, it did not develop sufficient power to drive the propeller. Some of the models were very funny, as then I knew nothing of aeronautics, but at the time I am afraid I thought them "just it." However, many things were learnt about woods, soldering, &c., that I never knew of before; for instance, not having any tools, I decided to get them as necessity arose; I did not know how to tin an iron, or, as a matter of fact, I did not know what flux was for; however, *experientia docet*.

"Well, after many attempts with numerous models, happening to see a copy of 'FLIGHT' for 1910, which showed how to drive a model with rubber, I built a model out of thin cane and tissue paper, and put in a rubber motor, but the rubber kinked this frame all over the place. I strengthened the frame and tried again and again, until one day it struck me that the front planes must be made so that they could be moved. I tried this, and after a while, about March, 1911, began to get a little bit of success. So far all my machines had been tractors, but I then built a twin-propelled model which would not fly at all. I afterwards found it was because one propeller had a bigger pitch than the other, and also that the propellers vibrated. Going back to tractors, I built several without success, and more than once decided to give it up, only to see one of my friend's models fly, or to get a sight of 'FLIGHT,' and then I



would build another. At the beginning of 1913, on trying wire planes such success was met with that by July of that year I had got a tractor to fly over 50 yards. I then turned to biplanes, and after building a good number made one in the early part of 1914 with a four-stick all-wire body, as shown in one of the sketches, and gears (tractor type), which got off the ground and flew about 30 yards, and afterwards it did about 100 yards. Two flying boats (both single tractors), were then constructed, but neither did anything but run along the water. A four-stick Morane followed, but without success, and so attention was turned to Taubes. My best flight to date was accomplished with one of them (three-stick body), shown in a sketch, viz., nearly 200 yards hand-launched. About three months ago I built a tractor biplane (four-stick covered), or, rather, a 'one and a half' plane, with a very large stagger on the planes and a very large tail.

## ROYAL AIRCRAFT FACTORY WAR DISTRESS RELIEF FUND.

THE second audited accounts of this very admirable fund are to hand from the hon. secretary of the fund for the period February 28th, 1915, to August 22nd, 1915, as set out below. It is interesting to note that the total receipts for the period October 11th, 1914, to August 22nd, 1915, have amounted to £1,459 15s. 2d., and the expenditure to £1,239 4s. 9d., leaving a balance in hand of £220 10s. 5d.

Receipts.	£	s.	d.	Expenditure.	£	s.	d.
Balance from last account	114	1	7	Royal Flying Corps Aid Fund	82	0	0
Weekly contributions up to and including week ending Aug. 15th, 1915	847	19	3	Aldershot News Prisoners of War Fund	69	0	0
Proceeds "D" Dept. Social and Dance	12	0	0	Belgian Relief Fund	67	0	0
Proceeds Dining Club Sub-Committee's Social and Dance	1	2	0	Farnborough Court Military Hospital	67	0	0
Proceeds War Distress Relief Fund Social and Dance	1	2	9	Connaught Hospital	60	0	0
Interest on Deposit Account	0	2	2	Cambridge Hospital	60	0	0
				Serbian Relief Fund	56	0	0
				Minley Military Hospital	56	0	0
				Weekly Despatch Tobacco Fund	50	0	0
				Royal Surrey County Hospital	49	0	0
				Royal Naval Air Service Comforts Fund	28	0	0
				Camberley Military Hospital	22	0	0
				St. John's Ambulance Association	18	15	0
				British Red Cross Society	18	10	0
				French National Relief Fund	3	0	0
				Relief of local cases of distress	45	13	0
				John Bull Relief Fund	2	0	0
				Bark (stamps on cheques)	0	16	8
				Postage	1	2	8
				Balance at bank	69	17	3
				Cash in hand	0	13	2
				Deposit Account	150	0	0
	976	7	9		976	7	9

### An Hospital for French Aviators.

A NEW hospital, composed of 40 beds, was opened on Sunday week at Viry-Châtillon, near Juvisy, which is on the outskirts of Paris. It is to be used specially for aviators.

### Fatal Accident to French Pilot.

It was reported from Paris last week that while flying near Le Bourget on August 31st, Flight-Lieutenant Michaux was caught in an air eddy above the clouds at a height of 700 metres. The machine "side slipped" and fell to the earth a few miles from Le Bourget. The aviator was killed instantaneously.

### Through German Eyes.

MOST of the German newspapers on the 23rd ult. gave prominence to an inspired announcement that the English Court had been moved from London to the North of England on account of the danger from Zeppelins.

### Germany and the Zeppelins.

IN the course of an article by a "neutral writer," who was recently in Germany, which appeared in the *Times* of the 19th ult., there was the following:—

"As to airships, Zeppelins and aviation generally, the Germans are much better pleased with themselves than they were last year. The Zeppelin has gone through various stages of popular criticism. It has also been greatly altered in appearance and construction. According to German enthusiasts, who talk a great deal about Zeppelins, far greater speed is now attained, and a quick method of rising into the air has been secured by the discharge of the exhaust in part of the outer skin of the balloon. The bombs also have been greatly improved and their power increased. In itself the Zeppelin is an expression of German psychology. The air raid on Karlsruhe, a previous one on Düsseldorf and those on Freiburg were the theme of discussion throughout the whole of Germany for days. They produced an effect difficult to explain to English people, who take their air raids so calmly."

### German Bill-Sticking Methods in Gallipoli.

A CORRESPONDENT in the *Morning Post* of the 28th ult. stated that a German aeroplane had paid occasional visits to the "Anzac" district of the Gallipoli Peninsula and dropped leaflets in the Australian and New Zealand trenches headed "Proclamation to the Anglo-French Expeditionary Forces," advising them to surrender.

### PUBLICATIONS RECEIVED.

*The Aviation Pocket Book*, 1915-16. By R. Borlase Matthews. London: Crosby Lockwood and Son. Price 3s. 6d.

### Catalogues.

*Sunbeam-Coatalen Aircraft Motors.* The Sunbeam Motor Car Co., Ltd., Moorfield Works, Wolverhampton.

*New Departure Ball Bearings.* Brown Brothers, Ltd., Great Eastern Street, London, E.C.

*Materials for Model Making and Illustrated Model List.* Smyth Motor and Aeroplane Co., 30, Homefield Road, Chiswick, London, W.

### NEW COMPANY REGISTERED.

**Volcano Manufacturing and Trading Co., Ltd.**—Capital £30,000, in £1 shares. Manufacturers of and dealers in machine and other guns (including all classes of naval and military guns), hydroplanes, aeroplanes, airships, and aircraft of all kinds, torpedoes, &c. Under agreement with H. C. King for the leasing of manufacturing of the Fabrica Vulcano and Colares, at Lisbon, Portugal.

### IMPORTS AND EXPORTS, 1914-1915.

AEROPLANES, airships, balloons, and parts thereof (not shown separately before 1910). For 1910 and 1911 figures, see "FLIGHT" for January 25th, 1912; for 1912 and 1913, see "FLIGHT" for January 17th, 1914; and for 1914, see "FLIGHT" for January 15th, 1915:—

	Imports.		Exports.		Re-Exportation.	
	1914.	1915.	1914.	1915.	1914.	1915.
January	5,945	20,382	210	435	879	13,706
February	28,132	380	106	138	441	18,823
March	27,731	280	1,934	7,218	1,440	5,090
April	11,384	2,189	1,175	23,986	1,473	275
May	17,062	178	4,059	12,530	9,484	8,250
June	15,967	5,469	5,082	3,730	142	2,400
July	15,548	1,240	4,994	13,372	1,695	—
August	52,448	664	630	36,276	910	247
	174,217	30,782	18,190	97,685	16,464	48,791

### Aeronautical Patents Published.

Applied for in 1915.

Published September 9th, 1915.

445. F. V. LISTER. Heavier-than-air machine.

Published September 16th, 1915.

6,989. R. WOOD. Automatically controlling balance of aircraft.

The Editor is always pleased to consider articles or photographs suitable for the pages of "FLIGHT," which will be paid for at the usual rates. All communications should be addressed to the Editor, "FLIGHT," 44, St. Martin's Lane, London, W.C.

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